THE TRANSACTIONS
OF THE
EDINBURGH OBSTETRICAL SOCIETY
THE TRANSACTIONS

OF THE

EDINBURGH OBSTETRICAL SOCIETY.

VOL. XXX.

SESSION 1904-1905.

EDINBURGH: OLIVER AND BOYD,
PUBLISHERS TO THE SOCIETY.
1905.
PREFACE.

This, the thirtieth volume of the Society's Transactions, contains a record of its proceedings during the Session 1904–1905.

In it, as in former volumes, the views brought forward in the Papers are to be considered as those of the writers themselves, and not as those of the Society as a body.

THE EDITOR.

October 1905.
EDINBURGH OBSTETRICAL SOCIETY.

OFFICE-BEARERS FOR SESSION 1904-1905.

President.
NATHANIEL THOMAS BREWIS, M.D., F.R.C.P. Ed., F.R.C.S. Ed.

Vice-Presidents.
PROFESSOR SIR JOHN HALLIDAY CROOM, M.D., F.R.C.S. Ed., F.R.C.P. Ed.

Treasurer.
WILLIAM CRAIG, M.D., F.R.C.S. Ed., 71 Bruntsfield Place.

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JAMES LAMOND LACKIE, M.D., F.R.C.P. Ed., 1 Randolph Crescent.

Librarian.
FRANCIS WILLIAM NICOL HAULTAIN, M.D., F.R.C.P. Ed., 12 Charlotte Square.

Editor of Transactions.
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JAMES RITCHIE, M.D., F.R.C.S. Ed., F.R.C.P. Ed.
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WILLIAM FORDYCE, M.D., F.R.C.P. Ed.
HARRY OLIPHANT NICHOLSON, M.D., F.R.C.P. Ed.
List of Presidents, Vice-Presidents, Treasurers, Secretaries, and Librarians of the Society.

### Presidents.

<table>
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<tr>
<th>Year</th>
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<td>Dr William Beilby</td>
<td>1880-81</td>
<td>Dr Angus Macdonald</td>
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<td>1874-75</td>
<td>Dr Matthew Duncan</td>
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<td>1878-79</td>
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<td>1904</td>
<td>Dr N. T. Brewis</td>
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### Vice-Presidents.

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### Treasurers.

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* Previous to 1861 the office of Treasurer was conjoined with that of Senior Secretary.
LIST OF OFFICE-BEARERS AND HONORARY FELLOWS.

SECRETARIES.

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LIBRARIANS.

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EDITORS OF TRANSACTIONS.

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<td>Dr J. Lamond Lackie</td>
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LIST OF FELLOWS OF THE SOCIETY.

HONORARY FELLOWS.

1898 Atthill, Lome, M.D., Monkstown Castle, Co. Dublin.
1897 Bantock, Dr George Granville, 14 Upper Hamilton Terrace, London, N.W.
1901 Bar, Prof. Paul, M.D., 122 Rue la Boétie, Paris.
1882 Barnes, Dr Robert, Bernersmede, Eastbourne.
1886 Bozeman, Dr Nathan, 96 Fifth Avenue, New York.
1891 Budin, Prof., Rue de la Faisanderie 54, Paris.
1901 Chrobak, Professor R., University of Vienna.
1898 Co., Dr. Prof. Henry C., M.D., 27 East Sixty-fourth St., New York.
1898 Cullingworth, Charles J., M.D., D.C.L., 14 Manchester Square, London, W.
1898 Doyen, C., M.D., Rue Piccini 6, Paris.
1882 Emmet, Dr, 93 Madison Avenue, New York.
1900 Fehling, Professor Herman, M.D., Kaiser Wilhelm’s University, Strassburg.
1882 Freund, Emeritus Professor, W. Kleiststrasse 6, Berlin.
1901 Fritsch, Prof. H., University of Bonn.
1902 Garrigues, Prof. H. J., 107 East Seventy-third St., New York.
1891 Guisserow, Prof., Charité, Berlin.
1882 Hegar, Professor, Albert Ludwig’s University, Freiburg.
1898 Kelly, Prof. Howard A., M.D., Johns Hopkins Hospital, Baltimore, U.S.A.
1892 Koeberle, Dr Eugene, Strassburg.
1898 Leopold, Prof. G., M.D., Seminar Strasse 25, Dresden.
1895 Martin, Prof. Dr A., N. Greifswald.
1903 Morisani, Professor O., San Felice a Piazza Dante 10, Naples.
1892 Müller, Professor Peter, Berne, Switzerland.
1899 Olehausen, Professor, Frauenklinik, Artillerie Strasse 13, Berlin.
1901 Ott, Professor D. von, M.D., Professor of Obstetrics, University of St Petersburg.
1899 Pasquali, Professor Ercole, Corso Vittorio Emmanuele 305, Rome.
1902 Pestalozza, Professor, Via Alfani 60, Florence.
1895 Pinard, Professor A., 10 Rue Cambicier, Paris.
1898 Pozzi, Professor S., M.D., Hôpital Broca, Paris.
1903 Schauta, Professor, Kochgasse 16, Vienna.
1882 Schultz, Professor B. S., University, Jen.
1903 Segond, Dr Paul, Quai d’Orsay, Paris.
LIST OF FELLOWS.

1905 Sinclair, Prof. Sir William Japp, Stanley Grove, Oxford Road, Manchester.
1901 Sneguireff, Professor W., University of Moscow.
1882 Tibone, Professor, Turin.
1905 Veit, Professor, University, Halle.
1897 Williams, Sir John, Bart., M.D., LL.D., Flas Liansthepan, Carmarthenshire.
1882 Winckel, Prof. von, Ludwig-Maximilian's University, Munich.
1905 Zweifel, Professor, Frauenklinik University, Leipzig.

CORRESPONDING FELLOWS.

1887 Baumgartner, Dr H. S., Newcastle-on-Tyne.
1892 Belbey, Dr J. H., Bromsgrove.
1863 Belgrave, Dr, Sydney.
1888 Bentley, Dr Arthur J., Cairo.
1880 Bosch, Dr Van Den, Liège.
1880 Brock, Dr W. J., Edinburgh.
1863 Brown, Dr R. C., Preston.
1887 Chepman, Dr C. W. J., London.
1894 Curatulo, Prof. G. E., Rome.
1869 Davies, Mr Thos., Whittlesea.
1873 Donovan, Mr W., Birmingham.
1877 Engelmann, Dr G., Krenzach.
1896 Eyres, Hugh, Richmond.
1883 Fraser, Dr Dyce, London.
1892 Fraser, Dr Hugh E., Dundee.
1879 Glaister, Prof., Glasgow.
1877 Grassett, Dr F., Toronto.
1866 Grenser, Dr Paul W. T., Dresden.
1864 Grévé, Dr, Norway.
1875 Grossbeck, Dr Hermann J., New York.
1897 Günzberg, Charkow, Russia.
1853 Hall, Dr D., Montreal.
1870 Haynes, Dr Stanley L., Malvern.
1880 Helme, Dr J. M., Carnforth.
1885 Helme, Dr T. A., Manchester.
1865 Henderson, Dr E., China.
1893 Howard-Jones, Dr J., Newport.
1887 Hume, Dr T., Surgeon-Major, India.
1851 Hurst, Dr George, Australia.
1882 Husband, Dr H. Aubrey, Manitoba.
1898 Hutchinson, Dr Robert, London.
1894 Jennings, Dr David D., New York.
1871 Johnston, Dr A. C., R.N., Edinburgh.
1882 Johnston, Sur.-Maj. Wilson, India.
1845 Keith, Dr George S., Currie.
1867 Kingston, Dr, Montreal.
1874 Kleinwächter, Prof. L., Grätz.
1871 Lambert, Dr, Paris.
1887 Limont, Dr J., Newcastle-on-Tyne.
1867 Lord, Dr Richard, London.
1859 Macdonald, Dr F. R., Inveraray.
1878 Macdougall, Dr John A., Cannes.
1879 Machattie, Dr Thomas A., Australia.
1862 Mackay, Dr M. A., Canada.
1870 Mc'Kendrick, Prof., Glasgow.
1869 Mc'Millan, Dr T. L., Australia.
1879 Marshall, Dr Thomas, London.
1886 Martin, Dr Karl, Berlin.
1860 Milburn, Dr George, London.
1883 Mills, Dr B. Langley, India.
1897 Minchin, Dr, Charkow, Russia.
1877 Moolman, Dr Henry, South Africa.
1869 Mossop, Mr Isaac, Bradford.
1859 Myrtle, Dr A. S., Harrogate.
1884 Neve, Dr E. F., Kashmir.
1849 Norris, Mr H., Petherton.
1857 Parker, Dr, Nova Scotia.
1869 Paton, Dr J. W., Bath.
1840 Peddie, Dr Alexander, Edinburgh.
1885 Puckle, Dr S. Hale, Bishop's Castle.
1880 Reid, Dr James More, Aldershot.
1876 Serdukoff, Dr A., St Petersburg.
1887 Shiels, Dr G. F., San Francisco.
1856 Skinner, Dr T., London.
1870 Smith, Dr D., Montrose.
1890 Smith, Dr William, America.
1881 Stephensong, Prof. W., Aberdeen.
1858 Stevenson, Mr E. Sinclair, Cape of Good Hope.
1854 Storer, Dr H., Boston, U.S.A.
1875 Sutugin, Dr V., St Petersburg.
1884 Thom, Dr Alexander, 18 Strathearn Road.
1867 Thomson, Mr W., Wrenbury.
1880 Turner, Dr William, Gibraltar.
1861 Veale, Dr H. R. L., London.
1864 Whiteside, Dr James, Greenwich.
1886 Whitton, Dr A. B., Aberchirder.
1865 Wollowicz, Dr C., St Petersburg.
LIST OF FELLOWS.

ORDINARY FELLOWS.

ARRANGED CHRONOLOGICALLY.

Note.—Those marked with an asterisk have been Members of Council. Members of Council continue in office two years.

****** Emeritus Professor Alexander Russell Simpson, M.D., F.R.C.P. Ed., 1858
James Watt Black, M.D., F.R.C.P. Lond., London, 1863
*James Jamieson, M.D., F.R.C.S. Ed., 1866
Thomas John Fordyce Messer, M.D., F.F.P. & S. Glasg., 1866
Helenburgh,
5 John Charles Ogilvie Will, M.D., C.M., Aberdeen, 1867
William Spalding, M.D., M.R.C.S. Eng., Gorebridge, 1867
George Dickson, M.D., F.R.C.S. Ed., 1867
*James Andrew, M.D., F.R.C.P. Ed., 1868
*William Taylor, M.D., F.R.C.P. Ed., 1868
10 James Ormiston Affleck, M.D., F.R.C.S. Ed., F.R.C.P. Ed., 1869
William Craig, M.D., F.R.C.S. Ed., 1870
Thomas Hardie, M.D., F.R.C.P. Ed., Leith, 1870

**** Professor Sir John Halliday Croom, M.D., F.R.C.S. Ed., F.R.C.P. Ed., 1870
**Alexander Ballantyne, M.D., F.R.C.P. Ed., Dalkeith, 1870
15 William Borwick Robertson, M.D., L.R.C.S. Ed., London, 1870
*Robert Lucas, M.D., F.R.C.P. Ed., Dalkeith, 1871
**James Carmichael, M.D., F.R.C.P. Ed., 1871
**Peter Alexander Young, M.D., F.R.C.P. Ed., 1871

20 **John Playfair, M.D., F.R.C.P. Ed., 1873
**Henry Macdonald Church, M.D., F.R.C.P. Ed., 1875
Archibald Bleoch, M.B., Sc.D., 1876
Joshua John Cox, M.D., F.R.C.S. Ed., Eccles, Manchester, 1876
25 James Dunsmure, M.D., LL.D., F.R.C.S. Ed., 1876
*Thomas Rutherford Ronaldson, M.B., F.R.C.P. Ed., 1876
Charles H. Thatcher, F.R.C.S. Ed., 1876
*John Brown Buist, M.D., F.R.C.P. Ed., 1877
George Herbert Bentley, L.R.C.P. & S. Ed., Kirkliston, 1877
30 Andrew Douglas Ramsay Thomson, F.R.C.P. Ed., Musselburgh, 1877

****** John Archibald, M.D., F.R.C.S. Ed., Bournemouth, 1877
David Berry Hart, M.D., F.R.C.P. Ed., 1877
*Andrew Balfour, M.D., C.M., Portobello, 1877
35 *David Menzies, M.B., F.R.C.S. Ed., 1877
Donald Roderick Morrison Murray, M.B., C.M., Leith, 1878
Robert Spence, M.B., C.M., Burntisland, 1878
George Mackay, M.B., F.R.C.S. Ed., 1878
James Henry Crowlance, L.R.C.P. & S. Ed., Stafford, 1878
40 Robert Bell, M.D., F.F.P. & S. Glasg., London, 1878
Alexander Dinsey Leith Napier, M.D., M.R.C.P.L., Australia, 1878
John M'Watt, M.B., C.M., Duns, 1879
*William Nicol Elder, M.D., L.R.C.P. & S. Ed., 1879
Henry Hay, M.B., C.M., 1879
45 *John Rogerson Hamilton, M.D., C.M., Hawick, 1879
LIST OF FELLOWS.

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<th>Name</th>
<th>Date of Admission</th>
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<td>George Rothwell Adam, M.D., C.M., <em>Melbourne,</em></td>
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<td>James Murray, M.B., C.M.,</td>
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<td><strong>Alexander Hugh Freeland Barbour, M.D., F.R.C.P. Ed.,</strong></td>
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<td>William Swanstone Spence Reid, M.B., C.M., <em>Kirkcudbright,</em></td>
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<td>James Ritchie, M.D., F.R.C.S. Ed., F.R.C.P. Ed.</td>
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<td>William Alexander Finlay, M.D., F.R.C.S. Ed., <em>Trinity,</em></td>
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<td>James More, M.D., M.R.C.S. Eng., <em>Rothwell, Kettering,</em></td>
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<td>Thomas Rennie Scott, M.D., C.M., <em>Musselburgh,</em></td>
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<td>James Hewetson, M.B., C.M., <em>Holmfied, Reigate,</em></td>
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<td>Hugh Logen Calder, M.D., F.F.P. &amp; S. Glasg.,</td>
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<td>Andrew Stark Currie, M.D., M.R.C.S. Eng., <em>London,</em></td>
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<td>Herbert R. Rendell, M.B., C.M., <em>St John's, Newfoundland,</em></td>
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<td>David Smart, M.B., C.M., <em>Liverpool,</em></td>
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<td><strong>Nathaniel Thomas Brewis, M.B., F.R.C.P. Ed., F.R.C.S. Ed.,</strong></td>
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<td>Thomas Proudfoot, M.B., F.R.C.P. Ed.</td>
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<td>W. Fraser Macdonald, M.B., C.M., <em>Glasgow,</em></td>
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<td>James Lumsden Bell, M.B., C.M., <em>Driffield, Yorkshire,</em></td>
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<td>William Richardson, M.D., F.R.C.S. Ed., <em>Bristol,</em></td>
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<td>Fourness Barrington, M.B., F.R.C.S. Eng., <em>Sydney, Australia,</em></td>
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<td><em>Francis William Nicol Haultain, M.D., F.R.C.P. Ed.,</em></td>
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<td>Frederick Anastasius Saunders, F.R.C.S. Ed., L.R.C.P. Ed., <em>Grahamstown, South Africa,</em></td>
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<td>John Smith, M.D., M.R.C.S. Eng., <em>Kirkcaldy,</em></td>
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<td>Allan Cuthbertson Sym, M.D., C.M.,</td>
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<td>Frederick J. Underhill, F.R.C.S. Ed., L.R.C.P. Ed., <em>British Columbia,</em></td>
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<td>John Edward Gemmell, M.B., C.M., <em>Liverpool,</em></td>
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<td>Robert Stewart, M.B., C.M.,</td>
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<td>Surgeon-Captain Robert Charles Macwatt, M.B., B.Sc., C.M.,</td>
<td>1885</td>
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<tr>
<td>7th Bengal Cavalry, <em>Bombay.</em></td>
<td>1885</td>
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</table>
LIST OF FELLOWS.

*E. H. Lawrence Oliphant, M.D., C.M., Glasgow, 1885
James Hogarth Pringle, M.B., F.R.C.S. Eng., Glasgow, 1886
James Auril Armitage, M.D., C.M., Wolverhampton, 1886
William Henry Miller, M.D., F.R.C.P. Ed., 1886
John M'Call, L.R.C.P. Ed., 1886
Thomas Wood, M.D., C.M., 1886
Hugh McCullum, L.R.C.P. & S. Ed., Kinloch-Rannoch, 1887
Nutting Stuart Fraser, M.B., M.R.C.S. Eng., St John's, Newfoundland, 1887
Augustus Alexander Matheson, M.D., F.R.C.P. Ed., 1887
Robert Mackenzie, M.D., C.M., Nairn, 1887
Thomas Jackson Thyne, M.B., F.R.C.P. Ed., 1887
John St Clair Boyd, M.D., M.Ch., Belfast, 1887
Ernest T. Robertson, M.D., M.R.C.S. Eng., New Zealand, 1887
*Samuel Sloan, M.D., F.F.P. & S. Glasc, Glasgow, 1887
James Wm. Fox, L.R.C.P. & S. Ed., Southampton, 1887
John Frederick Sturrock, M.B., C.M., Broughley-Ferry, 1887
Alexander Primrose, M.B., M.R.C.S. Eng., Toronto, Canada, 1887
Arthur Perigal, M.D., M.R.C.S. Eng., New Barnet, Herts, 1887
James Aitken Clark, M.B., C.M., 1887
Edward Carmichael, M.D., F.R.C.P. Ed., 1887
Percival Humble Watson, M.R.C.S. Eng., L.R.C.P. Ed., Newcastle-on-Tyne, 1887
Charles Clark Teacher, M.B., C.M., North Berwick, 1887
Robert Inch, M.B., C.M., Gorebridge, 1887
Ellie Thomas Davies, M.D., M.R.C.S. Eng., Liverpool, 1887
John Orr, M.B., C.M., Eccles, Lancashire, 1887
*George Owen Carr Mackness, M.D., C.M., Broughley-Ferry, 1887
Francis Joseph Baidon, M.B., C.M., Southport, 1887
Surgeon-Lt. Ralph H. Maddox, M.B., M.R.C.S. Eng., I.M.S., Bengal, 1887
James Williamson Martin, M.D., F.R.C.P. Ed., Dumfries, 1887
James Andrew Blair, M.D., C.M., D.Sc., Newcastle-on-Tyne, 1887
*John Thomson, M.D., F.R.C.P. Ed., 1887
Robert Kirk, M.D., F.R.C.S. Ed., Bathgate, 1887
Robert Adams Brewis, M.B., C.M., Leith, 1887
Alexander Bruce, M.D., F.R.C.P. Ed., 1887
Richard Joseph Tristan, L.R.C.P. & S. Ed., Retford, Notts, 1887
Robert Henry Blaikie, M.D., F.R.C.S. Ed., 1888
James Hutcheson, M.D., F.R.C.S. Ed., 1888
A. A. Jervis Pereira, M.D., Delagoa Bay, 1888
Christopher Martin, M.B., F.R.C.S. Eng., Birmingham, 1888
John George Havelock, M.D., C.M., Montrose, 1888
John Pirie, M.B., C.M., 1888
James Gibson Graham, M.B., C.M., Glasgow, 1888
Robert Adams Brewis, M.D., C.M., Dursley, 1888
John Allison, M.D., C.M., Kettersberg, Northampton, 1888
Archibald Cowan Guthrie, M.B., C.M., 1888
Samuel Beatty, M.B., C.M., Place, 1888
Professor James Chalmers Cameron, M.D., Montreal, 1888
George H. Temple, M.B., C.M., Weston-super-Mare, 1888
Norman L. Boxill, M.B., C.M., Barbados, 1888
John Hunter Helm, M.B., C.M., Batho, 1888
George Scott MacGregor, M.D., C.M., Glasgow, 1888
William Sneddon, M.B., C.M., Cupar-Fife, 1888
*William Fordyce, M.D., F.R.C.P. Ed., 1888
Charles E. Harvey, M.B., M.R.C.S. Eng., Sav-la-Mar, Jamaica, 1889
LIST OF FELLOWS.

160 Alexander Lang Murray, L.R.C.P. & S. Ed., Australia, 1889
*George Pirrie Boddie, M.B., C.M., 1889
James F. W. Ross, M.D., Toronto, Canada, 1889
James S. Fox, M.B., M.R.C.S. Eng., St. Helens, 1889

165 S. M'Murtry, M.D., Louisville, Kentucky, U.S.A., 1889
Hugh Jamieson, M.D., C.M., 1889
Thomas Wm. Nassau Greene, L.R.C.P. Ed., L.R.C.S.I., Dublin, 1889
Prof. John Clarence Webster, M.D., F.R.C.P. Ed., Chicago, 1889
*William George Aitchison Robertson, M.D., F.R.C.P. Ed., 1889

170 William Basil Orr, M.D., C.M., 1889
*Edward Farr Armour, M.B., C.M., 1889
George Wilkinson, M.D., C.M., Liverpool, 1889
*James Lamond Lackie, M.D., F.R.C.P. Ed., 1889
James Wilson, M.B., C.M., 1889
Archibald Maclean, M.D., C.M., Kilmarnock, 1890
Frederick William Lyle, M.D., C.M., London, 1890
Thomas Dobson Poole, M.D., C.M., St. Anne's-on-the-Sea, 1890
Charles Newberry Cobbett, M.D., C.M., London, 1890
Alexander William Gordon Price, M.B., C.M., 1890

*George Matheson Cullen, M.D., C.M., 1890
Frederick Albert L. Lockhart, M.B., C.M., Montreal, Canada, 1890
Edmund Frederick Tauney Price, M.B., C.M., 1890
Ernest Theophilus Roberts, M.D., C.M., Keighley, 1890

185 Owen Foulkes Evans, M.D., C.M., Liverpool, 1890
James Duncan Farquharson, M.B., C.M., Newcastle-on-Tyne, 1890
Harvey Littlejohn, M.B., F.R.C.S. Ed., 1890
Carstairs Cumming Douglas, M.D., F.F.P. & S. Glasg., Glasgow, 1890
Robert Wise, M.D., C.M., London, 1890

190 William Russell, M.D., F.R.C.P. Ed., 1890
Alexander Scott Duncan, M.B., C.M., Ponton, 1890
Prof. William Keiller, F.R.C.S. Ed., Galveston, Texas, U.S.A., 1890

*Michael Dewar, M.D., C.M., 1891
Gains T. Smith, M.D., Moncton, New Brunswick, 1891

195 John Hugh Alexander Laing, M.B., C.M., 1891
Robert Thin, M.B., F.R.C.P. Ed., 1891
James Harvey, M.D., C.M., 1891
Alexander Henderson, M.B., C.M., 1891
James Smith, M.D., C.M., 1891
George Balfour Marshall, M.D., C.M., Glasgow, 1891
William Booth, F.R.C.S. Ed., 1891
Richard T. Yoe, M.D., Louisville, Kentucky, U.S.A., 1891
Alexander Bruce Giles, M.D., C.M., 1891

205 Hamilton Graham Langwill, M.D., F.R.C.P. Ed., Leith, 1891
Herbert Ernest Lee, M.B., C.M., Australia, 1891
Charles Martin, M.B., C.M., Newton Abbot, 1892
William Murray Cairns, M.B., C.M., Liverpool, 1892
Robert Dundas Helm, M.D., C.M., Carlisle, 1892

James Thomas Moore Giffen, F.R.C.S. Ed., Chester, 1892
Frank Dendle, M.B., D.P.H., Isleworth, 1892
Frederick Thomas Anderson, M.D., F.R.C.S. Ed., Shrewsbury, 1892
Simson Carstairs Fowler, M.B., C.M., Juniper Green, 1892

215 Prof. John Alexander Campbell Kynoch, M.B., F.R.C.P. Ed., Dundee, 1892
Alexander Brown Ritchie, M.B., C.M., Hulme, Manchester, 1892
Walter John Shaw, M.B., C.M., Cockburnspath, 1892
Robert Stirling, M.D., C.M., Perth, 1892
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<td>William Henry Vickery, F.R.C.S. Eng., L.R.C.P. Lond., Newcastle-on-Tyne</td>
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<td>William Ramsay Smith, M.B., C.M., Australia</td>
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<td>Angus Vallance MacGregor, M.D., C.M., Hartlepool</td>
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<td>B. W. Broad, M.B., C.M., Cardiff</td>
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<td>Edwin Hindmarsh, M.B., C.M., Bengal</td>
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<td>Patrick Mackin, M.D., F.R.C.S. Ed., New Zealand</td>
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<td>G. Edgar Helme, M.B., C.M., Manchester</td>
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<td>Percy Theodore Hughes, M.B., C.M., Bexley</td>
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<td>John Hosack Fraser, M.B., F.R.C.P. Ed., Bridge of Allan</td>
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<td>Stewart Grant Ogilvy, M.B., C.M., Fauldhouse</td>
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<td>Thomas Howard Morgan, M.D., F.R.C.S. Ed., Queensland, Aust.</td>
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ORDINARY FELLOWS.

ARRANGED ALPHABETICALLY.

(a.) LIFE MEMBERS.

Adam, Dr George Rothwell, 84 Collins St, Melbourne, Aus. | 1879 |
Anderson, Dr John, Newholme, Pittlochry | 1896 |
Barbour, Dr A. H. Freeland, 4 Charlotte Square | 1879 |
Barclay, Dr William John, Australasian Club, Melbourne Place | 1899 |
Brock, Dr G. Sandison, 2 Via Veneto, Rome | 1894 |
Cavanagh, Dr Francis, 396 Ecclesall Road, Sheffield | 1903 |
Craig, Dr John, 71 Bruntsfield Place | 1900 |
Craig, Dr William, 71 Bruntsfield Place | 1870 |
Croom, Dr David Halliday, 25 Charlotte Square | 1903 |
Croom, Prof. Sir John Halliday, 25 Charlotte Square | 1870 |
Cumming, Dr John 20 Gilmore Place | 1896 |
Dobell, Dr C. B., 1 Royal Well Terrace, Charlton, Cheltenham | 1904 |
Dumat, Dr Henry Aylmer, 7 Devonshire Place, Durban, Natal, South Africa | 1898 |
Fleming, Dr Andrew M., Salisbury, Rhodesia | 1904 |
Fowler, Dr Simon, Waverley, Juniper Green | 1892 |
Frost, Dr Edmund, Chesterfield, Meads, Eastbourne | 1905 |
Gibson, Dr R. Wilson, Town Head House, Orton, Tebay | 1903 |
Grant, Dr Lewis, Neston, Cheshire | 1896 |
Hart, Dr D. Berry, 29 Charlotte Square | 1877 |
Inch, Dr Robert, Gorebridge | 1887 |
Johnston, Dr D. W., P.O. Box 2022, Johannesburg, Transvaal | 1892 |
Livingston, Dr George R., 47 Castle Street, Dumfries | 1898 |
M'Arthur, Dr W. Taylor, 359 S. Figueroa St, Los Angeles, California | 1901 |
M'Brearty, Dr J. Wilson, Greymouth, West Coast, New Zealand | 1899 |
M'Farlane, Dr Hilda M., Stirling District Asylum, Larbert | 1901 |
Macnab, Dr James, C. G., The Towers, Dysart | 1904 |
Maddox, Dr Ralph H., J.M.S., c/o Messrs Thomas Cook & Son, Old Court-House Street, Calcutta, India | 1887 |
Martin, Dr Christopher, Cleveland House, George Road, Edgbaston, Birmingham | 1888 |
Malville, Dr Kenmure, 2 Nile Grove | 1900 |
Morgan, Dr T. H., Gympie, Queensland, Australia | 1895 |
Mules, Dr P. Henry, Australasian Club, Melbourne Place | 1903 |
Pereira, Dr A. A. Jervis, Consul de Grèce en Mozambique, Lourenço Marques, Delagoa Bay, South Africa | 1888 |
Ponder, Dr Charles F., Glenorchy, Hobart, Tasmania | 1892 |
Ranking Dr J. E., Tunbridge Wells | 1881 |
ALPHABETICAL LIST OF FELLOWS.

35  Rose, Dr James F. W., 481 Sherbourne Street, Toronto, Canada, 1889
Simpson, Emeritus Professor A. R., 52 Queen Street, 1858
Simpson, Dr G. F. Barbour, 50 Melville Street, 1898
Simpson, Dr W. Petrie, Viewbank, Bathgate, 1892
Struthers, Dr John, Nqamakwe, Transkei, South Africa, 1895
Vatve, Dr Gopal Govind, care of H.H. The Rajah of Miraj, Bombay, India, 1894
Wells, Dr A. Simpson, c/o Dr Sharp, Mowbray, Cape Town, South Africa, 1903

(b.) ANNUAL SUBSCRIBERS.

Aarons, Dr S. Jervois, 14 Stratford Place, London, W., 1896
Adams, Dr Russell G. W., Langley Dale, Blenheim, New Zealand, 1904
Affleck, Dr J. O., 38 Heriot Row, 1869
Aitken, Dr C. J. Hill, 19 Church Street, corner of Oxford Street, East London, South Africa, 1902
Alexander, Dr W. B., 8 Blenheim Place, 1882
Allison, Dr J., Fuller House, Kettering, Northampton, 1888
Anderson, Dr Fred. T., Grimshill, Shrewsbury, 1892
Andrew, Dr James, 2 Atholl Crescent, 1868
Archibald, Dr J., Hazelden, Wimborne Road, Bournemouth, 1877
Armitage, Dr J. A., 58 Waterlo Road South, Wolverhampton, 1886
Armour, Dr E. F., 6 Bruntsfield Terrace, 1889
Aspland, Dr W. H. Graham, Church of England Mission, Peking, China, 1901
Baldon, Dr F. J., 42 Hoghton Street, Southport, 1887
Balfour, Dr Andrew, 23 Abercorn Terrace, Portobello, 1877
Ballantyne, Dr A., Dalkeith, 1870
Ballantyne, Dr H. S., Dalkeith, 1897
Ballantyne, Dr J. W., 24 Melville Street, 1883
Barnardo, Dr F. A. F., Capt. I.M.S., Ferozepore, Punjab, India, 1899
Barnes, Dr R. Balfour, 68 Joppa Road, Portobello, 1904
Barrington, Dr Fourness, 21 Macquarie Street, Sydney, Australia, 1884
Barry, Dr W. J. M., 17 Hickman Road, Penarth, 1898
Bateman, Dr F. J. Harvey, Heath End, Blackheath, London, S.E., 1898
Beatty, Dr Samuel, Craigvar, Pitlochry, 1888
Beasley, Dr R. W., 135 Deane Road, Bolton, 1894
Beesly, Dr Lewis, 21 West Hill, St Leonard's-on-Sea, 1904
Bell, Dr J. Lumsdon, Driffield, Yorkshire, 1884
Bell, Dr Robert, 15 Half-Moon Street, Mayfair, London, W., 1878
Bentley, Dr G. H., Kirkliston, 1877
Beveridge, Dr Robert, 9 James Place, Leith, 1896
Black, Dr J. Watt, 15 Clarges Street, Piccadilly, London, W., 1863
Blakie, Dr R. R., 10 Mayfield Gardens, 1888
Blair, Dr J. A., 18 Windsor Terrace, Newcastle-on-Tyne, 1887
Blech, Dr A., 2 Lonsdale Terrace, 1876
Bodie, Dr G. P., 73 Bruntsfield Place, 1889
Booth, Dr William, 2 Minto Street, 1891
Borrowman, Dr Philip G., Galvelmore, Crieff, 1893
Boxill, Dr N. L., Buttalls, St George, Barbados, 1888
Boyd, Dr J. St Clair, Chatsworth House, Malone Rd., Belfast, 1887
Brand, Dr Eden, Bellfield, Banchory, 1903
Brewis, Dr N. T., 23 Rutland Street, 1883
Brewis, Dr R. Adams, The West Gate, Dursley, Gloucestershire, 1888
Broad, Dr B. W., The Sanitorium, Cardiff, 1895
Brodie, Dr T. Scott, Belhaven Terrace, Wishaw, 1900
XX

ALPHABETICAL LIST OF FELLOWS.

Brodie, Dr W. Haig, Battle, Sussex, 1881
Brown, Dr William, Braemar, 1894
Brownlee, Dr James, 5 West End Terrace, Stockton-on-Tees, 1905
Bruce, Dr Alexander, 8 Ainsliew Place, 1887
Buis, Dr J. W., 1 Clifton Terrace, 1877
Buis, Dr R. C., 166 Nethergate, Dundee, 1895
Bunting, Dr W. Hartley, 22 Islington Row, Edgbaston, Birmingham, 1900
Burton, Dr Thomas J., Monklands, Reasden, Glasgow, 1896
Butchart, Dr C. A., 52 Leith Walk, Leith, 1894
Cairns, Dr W. Murray, 67 Catherine Street, Liverpool, 1892
Calder, Dr H. L., 60 Leith Walk, Leith, 1882
Callender, Dr D. A., 190 Ferry Road, Leith, 1901
Callender, Dr D. M., Inverard, Inverleigh Gardens, 1902
Callender, Dr T. M., Inverard, Sidcup, 1890
Cameron, Prof. James C., M.D., 941 Dorchester Street, Montreal, 1888
Campbell, Dr Malcolm, 17 Walker Street, 1900
Carmichael, Dr Edward, 21 Abercromby Place, 1887
Carmichael, Dr E. W. Scott, 32 Rutland Square, 1889
Carmichael, Dr James, 22 Northumberland Street, 1871
Carruthers, Dr G. J., 4 Melville Street, 1901
Cattanach, Dr J. G., 3 Alvanley Terrace, 1883
Chiene, Dr George L., 23 Alva Street, 1890
Chipman, Dr W. W., 297 Mountain St., Montreal, Canada, 1895
Church, Dr H. M., 36 George Square, 1875
Clark, Dr A. W. G., 28 Braid Crescent, 1901
Clark, Dr J. A., 4 Cambridge Street, 1887
Clark, Dr Katherine S., Craigleith Poorhouse, 1893
Cobbett, Dr C. N., 97 Cook Street, Victoria, British Columbia, 1890
Cochrane-Brown, Dr Edith, Strathmore, Ferry Road, Christ Church, New Zealand, 1905
Coromilas, Dr Georgie P., 67 Milvera Street, Athens, Greece, 1894
Cox, Dr Joshua J., Cromwell Chambers, 38 Deansgate, Manchester, 1876
Croudace, Dr J. H., Foregate House, Stafford, 1878
Cullen, Dr G. M., 50 Minto Street, 1890
Currie, Dr A. S., 81 Queen's Road, Brownwood Park, London, N., 1882
Darling, Dr T. Brown, 13 Merchiston Place, 1884
Darling, Dr William, 2 Warrender Park Terrace, 1900
Davidson, Dr D. G., 9 Granville Terrace, 1892
Davidson, Dr H. S., 15 Leven Terrace, 1904
Davies, Dr E. T., 1 St Domingo Grove, Liverpool, 1887
Dendle, Dr Frank, Overton House, Spring Grove, Isleworth, 1892
Deverell, Dr H. C., 12 Windsor Street, 1882
Dewar, Dr M., 24 Lauriston Place, 1891
Dickle, Dr J. T., 37 Lauriston Place, 1900
Dickson, Dr George, 9 India Street, 1887
Dickson, Dr George, 14 Ardmillan Terrace, 1901
Doble, Dr D. Robertson, Heathfield, Crieff, 1894
Donald, Dr C. W., 28 Portland Square, Carlisle, 1895
Douglas, Dr Carstairs, 2 Royal Crescent West, Glasgow, 1899
Duncan, Dr A. J., 158 Nethergate, Dundee, 1879
Duncan, Dr A. S., Mavis Bank, Polton, 1890
Dunlop, Dr H. M., 20 Abercromby Place, 1884
Dunsmuir, Dr J., 53 Queen Street, 1876
Eason, Dr John, 196 Newhaven Road, Leith, 1899
Easterbrook, Dr A. M., Gorebridge, 1893
Easterbrook, Dr C. C., Glengall, Ayr, 1892
Easton, Dr Thomas, 28 East Park Terrace, Southampton, 1894
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<th>Name</th>
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<th>Date of Admission</th>
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<tr>
<td>Eden, Dr T. Watts</td>
<td>26 Queen Anne Street, Cavendish Square, London, W.</td>
<td>1888</td>
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<tr>
<td>Edington, Dr D. C.</td>
<td>4 Portland Place, Penrith</td>
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<td>Elder, Dr Eleanor</td>
<td>4 John's Place, Leith</td>
<td>1903</td>
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<td>Elder, Dr W. Nicol</td>
<td>6 Torphichen Street</td>
<td>1879</td>
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<td>Evans, Dr O. F.</td>
<td>71 Mulgrave Street, Liverpool</td>
<td>1890</td>
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<td>Farie, Dr G. J.</td>
<td>Strathallan House, Bridge of Allan</td>
<td>1903</td>
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<td>Farquharson, Dr J. D.</td>
<td>242 Westgate Road, Newcastle-on-Tyne</td>
<td>1890</td>
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<td>Farquharson, Dr J. M.</td>
<td>2 Coates Place</td>
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<td>Faulkner, Dr Hugh</td>
<td>St John's House, Banbury, Oxon</td>
<td>1902</td>
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<td>Felkin, Dr R. W.</td>
<td>12 Oxford Gardens, North Kensington, London, W.</td>
<td>1884</td>
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<td>Ferguson, Dr J. Haig</td>
<td>7 Coates Crescent</td>
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<td>Ferguson, Dr P. J. H.</td>
<td>20 Leopold Place</td>
<td>1900</td>
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<td>Ferguson, Dr R. T.</td>
<td>Anstruther, Fife</td>
<td>1895</td>
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<td>Finlay, Dr W. A.</td>
<td>50 Trinity Road</td>
<td>1880</td>
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<td>Fitzwilliams, Dr D. C. L.</td>
<td>Cigwyn, Newcastle Emlyn, South Wales</td>
<td>1904</td>
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<td>Flett, Dr A. B.</td>
<td>60 George Square</td>
<td>1888</td>
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<td>Forbes, Dr J. Christie</td>
<td>Ardwick, Liberton</td>
<td>1898</td>
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<td>Forde, Dr E. S.</td>
<td>Dalry, Galloway</td>
<td>1893</td>
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<td>Fordyce, Dr A. Dingwall</td>
<td>19 Coates Crescent</td>
<td>1899</td>
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<td>Fordyce, Dr William</td>
<td>20 Charlotte Square</td>
<td>1888</td>
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<td>Fothergill, Dr W. E.</td>
<td>13 St John Street, Manchester</td>
<td>1894</td>
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<td>Forrester, Dr C. C.</td>
<td>3 Albert Terrace</td>
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<td>Fowler, Dr W. Hope</td>
<td>5 St Vincent Street</td>
<td>1900</td>
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<td>Fox, Dr James S.</td>
<td>6 Baldwin Street, St Helens</td>
<td>1889</td>
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<td>Fox, Dr J. W.</td>
<td>18 Bernard Street, Southampton</td>
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<td>Fraser, Dr J. Hossack</td>
<td>Fernfield, Bridge of Allan</td>
<td>1885</td>
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<td>Fraser, Dr J. Joyner</td>
<td>The Bowans, Avenue Victoria, Scarborough</td>
<td>1880</td>
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<td>Fraser, Dr Nutting S.</td>
<td>205 Gower Street, St John's, Newfoundland</td>
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<td>Frost, Dr W. E.</td>
<td>6 Atholl Place</td>
<td>1900</td>
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<td>Garbutt, Dr W. J.</td>
<td>1 Bournbrook Rd., Selly Pk., Birmingham</td>
<td>1897</td>
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<td>Gardiner, Dr Frederick</td>
<td>14 Rankinillor Street</td>
<td>1900</td>
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<tr>
<td>Gavin, Dr Alfred T.</td>
<td>Doonlea, Dunaskin</td>
<td>1905</td>
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<td>Gayton, Dr William</td>
<td>11 Redraine Ave., Finchley, Lond., N.</td>
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<td>Gemmell, Dr J. E.</td>
<td>12 Rodney Street, Liverpool</td>
<td>1885</td>
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<td>Gibbons, Dr Sherwin</td>
<td>2003 Centre Street, West Roxbury, Mass., U.S.A.</td>
<td>1904</td>
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<td>Gibson, D. Cameron R.</td>
<td>Sarkbank, Gretna</td>
<td>1903</td>
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<td>Gibson, Dr E. Arthur</td>
<td>68 Porchester Terrace, Hyde Park, London, W.</td>
<td>1897</td>
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<td>Giffen, Dr J. T. M.</td>
<td>188 Boughton, Chester</td>
<td>1892</td>
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<td>Giles, Dr A. B.</td>
<td>4 Palmerston Place</td>
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<td>Gilmour, Dr T. F.</td>
<td>Port Ellen, Islay</td>
<td>1882</td>
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<td>Glegg, Dr R. Ashleigh</td>
<td>63 Comiston Road</td>
<td>1901</td>
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<td>Graham, Dr A.</td>
<td>Curriebank, Currie</td>
<td>1897</td>
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<td>Graham, Dr D. J.</td>
<td>26 Rutland Street</td>
<td>1895</td>
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<td>Graham, Dr F. M.</td>
<td>16 Mayfield Gardens</td>
<td>1894</td>
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<td>Graham, Dr J. Gibson</td>
<td>17 Ashton Ter., Dowanhill, Glasgow</td>
<td>1888</td>
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<td>Graham, Dr R. Balfour</td>
<td>Leven, Fife</td>
<td>1893</td>
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<td>Green, Dr John Ligertwood</td>
<td>18 Mayfield Gardens</td>
<td>1902</td>
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<td>Greene, Dr T. W. N.</td>
<td>45 Dartmouth Square, Leeson Park, Dublin</td>
<td>1889</td>
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<td>Gregory, Dr W. H.</td>
<td>North Bar Street, Beverley, Yorks</td>
<td>1893</td>
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<td>Guthrie, Dr A. Cowan</td>
<td>21 Filigree Street</td>
<td>1888</td>
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<tr>
<td>Hall, Dr A. A.</td>
<td>2 Hermitage Place, Leith</td>
<td>1905</td>
</tr>
<tr>
<td>Hall, Dr D. G.</td>
<td>10 Cambridge Road, Hove, Sussex</td>
<td>1900</td>
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<tr>
<td>Hamilton, Dr J. R.</td>
<td>Hawick</td>
<td>1879</td>
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</tbody>
</table>
xxii  ALPHABETICAL LIST OF FELLOWS.

195  Hamp, Dr J. Walton, Penn Road, Wolverhampton, 1886
196  Harvie, Dr Mabel, High Lane, near Stockport, 1902
197  Hardie, Dr Thomas, 10 John's Place, Leith, 1870
198  Harlin, Dr Francis W., Peak Downs District Hospital, Clermont, Queensland, 1900
199  Harper, Dr R. A. J., Sheriffhall, Dalkeith, 1901

200  Harvey, Dr Charles E., Kingswood, Sav-la-Mar, Jamaica, W.I., 1889
201  Harvey, Dr James, 7 Blenheim Place, 1891
202  Haultain, Dr F. W. N., 12 Charlotte Square, 1894
203  Havelock, Dr J. G., Sunnyside, Montrose, 1888
204  Hay, Dr Henry, 19 Nelson Street, 1879

205  Hellier, Dr J. B., 27 Park Square, Leeds, 1904
206  Helm, Dr J. H., Clarence Cottage, Ratho, 1888
207  Helm, Dr R. Dundas, 13 Portland Square, Carlisle, 1892
208  Helme, Dr G. Edgar, Gloucester House, Rusholme, Manchester, 1895
209  Henderson, Dr Alexander, 21 Pitt Street, 1891
210  Herring, Dr Percy T., 87 Comely Bank Avenue 1899

211  Hewetson, Dr J., Holmfield, Reigate, 1881
212  Hindmarsh, Dr Edwin, Mozufferpore, Tirhoot State Railway, Bengal, India, 1895
213  Hobson, Dr H. Overton, Villa Sakkara, Helouan, Egypt 1901
214  Hoggan, Dr Robert, Liberton Park, Liberton, 1894
215  Holmested, Dr C. W., Tuxford, Newark, Notts, 1900
216  Hughes, Dr H. L., Llwyn-Werm, Dowlaish, Glamorganshire, 1894
217  Hughes, Dr P. T., Heath Ashton, Bexley, Kent, 1895
218  Hunter, Dr George, 33 Palmerston Place, 1881
219  Hutcheson, Dr J., 44 Moray Place, 1888

220  Inglis, Dr Elsie M., 8 Walker Street, 1901
221  Jamieson, Dr Hugh, 13 Lauriston Place, 1889
222  Jamieson, Dr James, 43 George Square, 1866
223  Jamieson, Dr J. Boyd, 43 George Square, 1900

224  Jardine, Dr Robert, 20 Royal Crescent, Glasgow, W., 1897
225  Jeffrey, Dr John, Glen Bank, Jedburgh, 1901
226  Johnston, Dr Robert B., 22 Lauriston Place, 1903
227  Johnston, Dr R. J., 1 Buccleuch Place, 1899
228  Johnstone, Dr R. W., Hopetoun, Cults, Aberdeen, 1903
229  Jones, Dr W. Llewellyn, 58 Thomas St., Merthyr-Tydfil, 1903

230  Keay, Dr J. W., 18 Montrose Terrace, 1903
231  Keiffer, Prof. Wm., 210 Levy Building, Galveston, Texas, U.S.A., 1890
232  Keir, Dr I. C., The Limes, Melksham, Wilts, 1903
233  Ker, Dr Claude B., City Hospital, Comiston Road, 1894
234  Kerr, Dr J. M. Munro, 28 Berkeley Terrace, Glasgow, 1894
235  Kerr, Dr J. W., 121 Trinity Road, Trinity, 1901

236  King, Dr J. K., The Glen Springs Sanitorium, Watkins, New York, U.S.A., 1884
237  Kirk, Dr Robert, Rowan Bank, Bathgate, 1887
238  Kirkness, Dr J. M., 31 Alva Street, 1903
239  Kynoch, Professor Campbell, 8 Airlie Place, Dundee, 1892

240  Lackie, Dr James, 1 Randolph Crescent, 1889
241  Laing, Dr J. H. A., 11 Melville Street, 1891
242  Langwell, Dr H. G., 4 Hermitage Place, Leith, 1891
243  Learby, Dr T. Garnet S., Grand Hotel, Melbourne, Australia, 1904
244  Lee, Dr Herbert E., Gunnedah, N.S.W., Australia, 1892

245  Littlejohn, Dr Harvey, 1 Atholl Crescent, 1890
246  Lochhead, Dr James, Earlston, 1904
247  Lockhart, Dr F. A. L., 38 Bishop Street, Montreal, Canada, 1890
248  Low, Dr R. C., 87 Colinton Road, 1902
249  Lucas, Dr Robert, Dalkeith, 1871

250  Luke, Dr Thomas D., 95 Shandwick Place, 1901
251  Lyell, Dr John, 15 Marshall Place, Perth, 1904
ALPHABETICAL LIST OF FELLOWS.

Lyle, Dr F. W., 97 Gordon Road, Ealing, London, W., 1890
Lyle, Dr R. P. Banken, 11 Ellison Place, Newcastle-on-Tyne, 1901
MacArthur, Dr D. G., Fort William, 1903

255
McCullum, Dr H., Kelso, 1886
McCullum, Dr H., Kilmarnock, 1887
M'Cann, Dr F. J., 5 Curzon Street, Mayfair, London, W., 1896
Macdonald, Dr Alexander, 42 Polwarth Terrace, 1898
Macdonald, Dr A. G., 4 Torphichen Street, 1903

260
Macdonald, Dr Angus, 9 Rutland Square, 1897
Macdonald, Dr John, Marathon House, Cupar-Fife, 1902
Macdonald, Dr W. Fraser, 16 Buckingham Ter., Glasgow, W., 1884
McGibbon, Dr John, 22 Heriot Row, 1902
MacGregor, Dr Alastair, Stafford Lodge, Market Harborough, 1905

265
MacGregor, Dr A. V., Durham House, Hartlepool, 1895
MacGregor, Dr Donald, Friar Bank, Jedburgh, 1900
Macgregor, Dr G. S., 2 Burnbank Terrace, Glasgow W., 1888
MacGregor, Dr Jessie M., 1165 Vine Street, Denver, Colorado, U.S.A., 1901
M'Twrath, Dr Kennedy C., 54 Avenue Rd., Toronto, Canada, 1901

270
Mackay, Dr George, 74 Bruntsfield Place, 1879
Mackay, Dr W. H., 23 Castlefield, Berwick-on-Tweed, 1899
Mackenzie, Dr R., Nairn, 1887
Mackenzie, Dr T. C., Morningside Royal Asylum, 1900
M'Keran, Dr R. Gordon, 1 Albyn Place, Aberdeen, 1896

275
Mackie, Dr George, Boyd's Lodge, Malvern, Worcestershire, 1900
Mackin, Dr Patrick, 12 Ingestre St., Wellington, New Zealand, 1895
Mackness, Dr G. O. C., Fort Street House, Broughty-Ferry, 1887
Maclagan, Dr D. W., Kaponga, Taranaki, New Zealand, 1901
M'Leary, Dr Malcolm, 7 Bellevue Place, 1900

280
M'Lean, Dr Archibald, Crosshouse, Kilmarnock, 1890
Maclean, Dr Ewen, J., 12 Park Place, Cardiff, 1902
Macmillan, Dr John, 8 George Square, 1897
M'Murtry, Dr L. S., 1912 Sixth Street, Louisville, Kentucky, U.S.A., 1889
M'Nicol, Dr P. B., 10 Pitt Terrace, Stirling, 1902

285
MacRae, Dr John, Lynwood, Murrayfield, 1893
MacVie, Dr S., Chirnside, 1881
M'Watt, Dr John, Duns, 1879
Macwatt, Dr R. C., 7th Bengal Cavalry, care of Messrs Henry S. King & Co., 5 Pall Mall, London, S.W., 1885
Malcolmson, Dr Alexander M., Dalveen, St John's Road, Corstorphine, 1901

290
Manford, Dr J. Stanley, 70 Osborne Road, Newcastle-on-Tyne, 1900
Marshall, Dr G. Balfour, 19 Sandyford Place, Glasgow, 1891
Marshall, Dr William, Milnathort, 1884
Martin, Dr Charles, Degenham House, Newton Abbot, South Devon, 1892
Martin, Dr J. W., Charterhall, Newbridge, Dumfries, 1887
MARTINE, Dr W. R., Westmon, Haddington, 1896
Matheson, Dr A. A., 41 George Square, 1887
Matheson, Dr Doderick M., 33 Buccleuch Place, 1897
Maunhage, Dr Gabriel, 6 Rue de Tournon, Paris, 1898
Menzies, Dr David, 20 Rutland Square, 1877

300
Meser, Dr Fordyce, Helensburgh, 1866
Michael, Dr Gustave, 5 Cambridge Place, Chestergate, Regent's Park, London, N.W., 1885
Millard, Dr W. W., Middlefield House, Leith Walk, 1884
Miller, Dr Alexander, 1 Royal Terrace, Crosshill, Glasgow, 1902
Miller, Dr W. H., 51 Northumberland Street, 1886

305
Milligan, Dr D., 11 Palmerston Place, 1893
Milne, Dr W. M., 14 Newington Road, 1898
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<th>Name</th>
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<tr>
<td>Mitchell, Dr G. B.</td>
<td>1 Skinner Street, Whitby</td>
<td>1893</td>
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<td>Mitchell, Dr E. M.</td>
<td>c/o Mrs Johnston, 151 Bruntfield Place</td>
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<td>Montgomery, Dr John</td>
<td>The Highlands, Realsil Heath, Birmingham</td>
<td>1885</td>
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<td>Moores, Mr J. Ernest</td>
<td>1 Glebe Avenue, Stirling</td>
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<td>More, Dr James, Rothwell</td>
<td>Kettering, Northampton</td>
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<td>Morrison, Dr Albert E.</td>
<td>Wellington Road, West Hartlepool</td>
<td>1888</td>
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<td>Morris, Dr S. Glanville</td>
<td>Myrdin House, Mardy, Glamorganshire</td>
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<td>Murray, Dr D. K.</td>
<td>41 Albany Street, Leith</td>
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<td>Murray, Dr James, 1 Brandon Street</td>
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<td>Nairne, Dr J. Stuart</td>
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<td>Napier, Dr A. D. Leith</td>
<td>20 Angas Street, Adelaide, South Australia</td>
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<td>20 Manor Place</td>
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<td>Ogden, Dr O Watson</td>
<td>38 Jesmond Road, Newcastle-on-Tyne</td>
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<td>Ogilvy, Dr Stewart Grant</td>
<td>Fauldhouse</td>
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<td>Oliphant, Dr E. H.</td>
<td>Lawrence, 23 Newton Place, Glasgow</td>
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<td>Orr, Dr John, Heathen</td>
<td>Clarendon Road, Eccles, Lancs.</td>
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<td>Paterson, Dr G. Keppie</td>
<td>19 Albany Street</td>
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<td>147 Bruntfield Place</td>
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<td>Pattou, Dr W. Scott</td>
<td>I.M.S., Medical Officer in Charge, C/49 Native</td>
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<td>Aden Hinterland, S. Arabia</td>
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<td>Pearson, Dr C. M.</td>
<td>17 Alva Street</td>
<td>1902</td>
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<td>Peddie, Dr H. Anderson</td>
<td>24 Palmerston Place</td>
<td>1882</td>
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<td>Pergal, Dr A.</td>
<td>New Barnet, Herts</td>
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<td>Pirie, Dr John</td>
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<td>Playfair, Dr John</td>
<td>5 Melville Crescent</td>
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<td>Wanganui, New Zealand</td>
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<tr>
<td>Porteous, Dr J. Lindsay</td>
<td>83 Warburton Avenue, Yonkers, New York</td>
<td>1875</td>
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<tr>
<td>Porter, Dr Frederick</td>
<td>65 Morningside Road</td>
<td>1904</td>
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<td>Potts, Dr W. A.</td>
<td>118 Hagley Road, Edgbaston, Birmingham</td>
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<td>53 Dick Place</td>
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<tr>
<td>Price, Dr A. W. Gordon</td>
<td>9 Grange Road</td>
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<tr>
<td>Price, Dr E. F. T.</td>
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<td>Prine, Dr Alex</td>
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<td>Pringle, Dr J. Hogarth</td>
<td>172 Bath Street, Glasgow</td>
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<td>30 Lauriston Place</td>
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<td>Rabagliati, Dr A. H.</td>
<td>1 St Paul's Road, Bradford, Yorkshire</td>
<td>1903</td>
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<tr>
<td>Reid, Dr J. Martin</td>
<td>Stanley Villas, Crosby, near Liverpool</td>
<td>1901</td>
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<td>Reid, Dr W. L.</td>
<td>7 Royal Crescent W., Glasgow</td>
<td>1880</td>
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<td>Reid, Dr W. Spence</td>
<td>Oakley, Kirkeudbright</td>
<td>1880</td>
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<tr>
<td>Rendell, Dr Herbert R.</td>
<td>P.O. Box 606, St John's, Newfoundland</td>
<td>1882</td>
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<td>Rhodes, Dr J. H.</td>
<td>Vicarage Terrace, Kendal</td>
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<tr>
<td>Richardson, Dr William</td>
<td>86 Cotham Road, Bristol</td>
<td>1888</td>
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<tr>
<td>Ritchie, Dr A. Brown</td>
<td>163 Withington Road, Whalley Range, Manchester</td>
<td>1892</td>
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<td>Ritchie, Dr James</td>
<td>22 Charlotte Square</td>
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<td>Ritchie, Dr W. T.</td>
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<td>Robertson, Dr Ernest</td>
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<td>Roberts, Dr Ernest T.</td>
<td>Oaklands House, Keighley</td>
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360 Roberts, Dr Henry H., 23 Bridge Street, Musselburgh, 1904
    Roberts, Dr R. W., Cattybrook House, Cwmavon, near Port
    Talbot, South Wales
    Robertson, Dr George, Brahead, Viewfield Place, Dunfermline, 1901
    Robertson, Dr Robert, 26 Royal Circus
    Robertson, Dr W. B., St Anne's, 101 Thurloe Park Road, 1904
    West Dulwich, London, S.E.
    Robertson, Dr W. G. Aitchison, 26 Minto Street, 1900
    Robins, Dr H., Sav-la-Mar, Jamaica, W.I.
    Robinson, Dr H. Shapter, Talfourd House, 78 Peckham Road, 1903
    Camberwell, London, S.E.
    Ronaldson, Dr T. R., 8 Charlotte Square, 1900
    Ross, Dr Albert F., 38 Pitt Street, 1903
    Ross, Dr J. W. E., 1 Merchiston Bank Avenue, 1904
    Russell, Dr W., 3 Walker Street, 1899
    Saleeby, Dr C. W., 7 Manseville Place, Manchester Square, 1899
    London, W.
    Sandstein, Dr Alfred C., The Laurels, Gloucester Street, 1898
    Christchurch, New Zealand
    Saunders, Dr F. A., Grahamstown, Cape Colony, South Africa
    1885
    Schofield, Dr Linn J., Warrensburg, Mo., U.S.A.
    Scott, Dr T. R., Musselburgh
    Secord, Dr E. R., 112 Market St., Brantford, Ontario, Canada
    Shaw, Dr C. J., Perth District Asylum, Murthly 1903
    Shaw, Dr W. J., Cockburnspath
    Shearer, Dr Alfred, Newtown, N. Wales
    Simpson, Dr F. D., 7 Kew Terrace
    Sivyer, Dr Henry, 36 Grosvenor Street, London, W.
    Slight, Dr J. D., 61 London Road, Leicester
    Sloan, Dr Allen T., 22 Abercornby Place
    385 Sloan, Dr S., 6 Somerset Pl., Sauchiehall St. West, Glasgow, 1887
    Sloss, Dr William, Windsor, Sturt Street, Ballarat, Melbourn, Australia
    Smart, Dr David, 74 Hartington Rd., Sefton Park, Liverpool
    Smith, Dr G. H. Walton, Pendower, Oxford St., Paddington, Sydney, Australia
    Smith, Dr Gains T., 15 Church Street, Moncton, New Brunswick, Canada
    1891
    Smith, Dr James, 4 Brunton Place
    Smith, Dr John, Brycelhall, Kirkcaldy
    Smith, Dr W. Ramsay, Winchester St., East Adelaide, Aus.
    Sneddon, Dr William, 58 Bonnygate, Cupar-Fife
    Somerville, Dr C. W., London Mission, Wuchang, by Hankow, Central China
    1902
    Somerville, Dr James W., 12 Abbotsford Road, Galashiels
    Spalding, Dr William, Gorebridge
    Spence, Dr R., St Ninians, Burntisland
    Spence, Dr William, Sydney House, Dollar
    Stephen, Dr W. A., Loftus-in-Cleveland, Yorkshire
    Stephenson, Dr W. H., Landsdowne House, Blackley, Manchester
    Stevens, Dr John, 2 Shandon Street
    Stewart, Dr J. S., 15 Merchiston Place
    Stewart, Dr R., 42 George Square
    Stirling, Dr R., 4 Atholl Place, Perth
    Story, Dr B. S., Wellington, New Zealand
    Strathm, Dr Arthur C. Rosebank, Rattray, Blairgowrie
    Stumbles, Dr H. M., Ambles House, Ambles, Northumberland
    Sturrock, Dr J. F., Arima, Broughty-Ferry
    Sullivan, Dr John, 34 Gilmore Place
    400 Sym, Dr A. C., 144 Morningside Road
ALPHABETICAL LIST OF FELLOWS.

Taylor, Dr David R., St Helen's, Ayton, 1896
Taylor, Dr William, 12 Melville Street, 1868
Taylor, Dr W. Macrae, 12 Melville Street, 1895
Teacher, Dr C., North Berwick, 1887

Temple, Dr G. H., Ailanthus, Weston-super-Mare, 1888
Tennant, Dr John, Ashby, near Doncaster, 1902
Thatcher, Dr C. H., 8 Melville Crescent, 1877
Thin, Dr Robert, 38 Albany Street, 1891
Thomas, Dr G. C., 34 West Hill, Sydenham, London, S.E., 1899

Thompson, Dr F. E., 20 Park Avenue, Montreal, Canada, 1902
Thompson, James L., Castlemaine, Victoria, Australia, 1894
Thompson, Dr John A. Douglas, Bank House, Morley, near Leeds, 1902
Thomson, Dr A. D. R., 19 Bridge Street, Musselburgh, 1877
Thomson, Dr John, 14 Coates Crescent, 1887
Thomson, Dr J. Stitt, Castle Hill House, Lincoln, 1877
Thomson, Dr T. J., 31 Morningside Road, 1902
Thyne, Dr T. J., 18 Randolph Crescent, 1887

Tod, Dr John, 69 Ferry Road, Leith, 1892
Tough, Dr F. W. K., 17 East Hermitage Place, Leith, 1901
Tristan, Dr R. J., 28 Carrogate, Retford, Notts, 1887
Underhill, Dr C. E., 8 Coates Crescent, 1872
Underhill, Dr Frederick T., 1373 Barclay Street, Vancouver, British Columbia, 1885
Underhill, Dr T. Edgar, Dunedin, Barnt Green, Worcestershire, 1879
Vassie, Dr Alexander H., 98 Friary Road, West Hampstead, London, N.W., 1891

Vickery, Dr W. H., 1 Bristol Terrace, Beech Grove, Newcastle-on-Tyne, 1892
Wade, Dr George, St John's, Melrose, 1893
Wallace, Dr Abraham, 39 Harley Street, London, W., 1879
Wallace, Dr R. W. L., Turriff, Aberdeenshire, 1905
Watson, Dr B. P., 6 Cambridge Street, 1902

Watson, Dr Douglas Chalmers, 22 Coates Crescent, 1897
Watson, Dr F. H., 2 Victoria Square, Newcastle-on-Tyne, 1887
Watson, Dr R. H., 17 Glengyle Terrace, 1896
Waugh, Dr John, 26 Finsbury Pavement, London, E.C., 1881
Webster, Dr A. D., 5 Blacket Avenue, 1881

Webster, Prof. J. C., 706 Reliance Building, 100 State Street, Chicago, U.S.A., 1889
White, Dr A. L., Manchester Road, Castleton, Manchester, 1903
Whyte, Dr J. Curtis, Stonefield, Caanau Lane, 1896
Wilcockson, Dr G. Morton, Whitley Cross, Reading, 1893
Wilkie, Dr James, Selville House, Portobello, 1887

Wilkinson, Dr George, 8 Dingle Hill, Liverpool, S., 1889
Will, Dr J. C. Oglivie, 17 Bon-Accord Square, Aberdeen, 1887
Williams, Dr J. T., 10 Barged Tern, Treharris, Glamorgan-shire, 1904

Willcox, Dr F. Mayes, 8 Strathearn Road, 1902
Wilson, Dr James, 53 Inverleith Row, 1889
Wilson, Dr T. D., 10 Newington Road, 1879
Wise, Dr Robert, 5 Weston Park, Crouch End, London, N., 1890
Wood, Dr Thomas, 182 Ferry Road, 1886
Wood, Dr William, 5 Roxburgh Street, 1892
Woodside, Dr J. T., 5 Roden Ter., Woodstock, Belfast, 1898

Wright, Dr W. F., Bonnington Mount, Bonnington Terrace, 1887
Yoe, Dr Richard T., 2103 Floyd Street, Louisville, Kentucky, U.S.A., 1891
Young, Dr H. C. Taylor, 209 Macquarie Street, Sydney, New South Wales, 1900

Young, Dr Peter A., 25 Manor Place, 1871
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<th>INCOME</th>
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<td>Dr Berry for Illustrations</td>
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<td>Entrance Fees from 23 new Ordinary Fellows</td>
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<td>Annual Contributions from 384 Ordinary Fellows</td>
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<th>Balance to New Account,¹</th>
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| TOTAL                            | £694 18 2 |

¹ Of this Balance the sum of £250, 10s. 6d. is invested in 2½ per cent. Consols.
ELECTION OF OFFICE-BEARERS, ETC.

The accounts were audited by Dr Darling and Dr James Ritchie, and found correct.

Professor Simpson moved a hearty vote of thanks to the Treasurer, which was unanimously accorded.

II. The Society then proceeded to the election of Office-bearers for the present session, and the President announced the result as follows:—President, Dr N. T. Brewis; Vice-Presidents (Senior), Professor Kynoch, Dundee; (Junior), Sir Halliday Croom; Treasurer, Dr Wm. Craig; Secretaries, Dr Lamond Lackie and Dr Barbour Simpson; Librarian, Dr Haultain; Editor of Transactions, Dr Lamond Lackie; Members of Council, Dr James Ritchie, Dr J. W. Ballantyne, Professor Jardine (Glasgow), Dr Aitchison Robertson, Professor Simpson, Dr W. Fordyce, Dr Thos. Wood (Leith), and Dr Oliphant Nicholson.

Professor Simpson moved a cordial vote of thanks to Dr Fordyce, the retiring Senior Secretary.

III. The following gentlemen were elected Ordinary Fellows of the Society:—J. T. Williams, M.D., Plaspant, Nantgaredig, Carmarthenshire; Wm. Brown, M.B., Ch.B., Braemar; John Lyell, M.D., 15 Marshall Place, Perth; Henry H. Robarts, M.B., Ch.B., St Mary's, Birchington-on-Sea, Kent; T. G. S. Leary, Castle Derg, co. Tyrone; R. Balfour Barnetson, M.B., Ch.B., 18 Buccleuch Place, Edinburgh; James Lochhead, M.A., B.Sc., M.B., Ch.B., Earlston, Berwickshire; Arthur C. Strain, M.B., Ch.B., Rosebank Rattray, Blairgowrie.

IV. PRESIDENTIAL ADDRESS.


LADIES AND GENTLEMEN,—Fellows of the Edinburgh Obstetrical Society,—In taking the chair to-night, and starting the work of our sixty-sixth session, I feel powerfully the sense of
my utter unworthiness in occupying a position of such distinction. This sense of unworthiness makes me feel, all the more deeply, your kindness in electing me a year ago to a post which, in the past, men of great eminence have been proud to hold. I can only say that I thank you from the bottom of my heart. It is fortunate that the success of the Society depends to such a small extent on the efforts of the President. The author of an old romance has made one of his characters say: "Your lordship may hold it for most certain that the office of President is not a little honourable, but jointly therewith very tedious and burdensome." Needless to say, the President of the Obstetrical Society cannot agree with the latter sentiment. His task, if we exclude the preparation of an annual address, is of the easiest and most delightful kind. He has to preside over a band of earnest workers who require neither incentive nor persuasion, but who work for the work's sake, and keep the lamp of scientific progress burning, and hand it on from year to year. This indicates the health of the Society, and signifies a living force in the obstetrical world.

I know of no society in which this spirit is more manifest than in our own. It has existed from the beginning, and I think we may look on it as an inheritance from the founders. The result of this working spirit, as is apparent to-day, is, that not only is the Society intellectually and scientifically vigorous, but is also strong numerically and financially. But while this is a matter on which we can reasonably congratulate ourselves, we have to deplore the ravages in our ranks, made inevitable by the relentless hand of death, which robs us every year of some of our brightest ornaments and most useful workers. It will be my sad privilege to refer on another occasion to them individually.

"The memory, and monuments of good men
Are more than lives, and though their tombs want tongues,
Yet have they eyes that daily sweat their losses,
And such a tear no time can value."
When I joined the Society twenty years ago, the Fellows numbered 331; to-day they number 579. The income twenty years ago was £136, 16s. 11d.; to-day, £694, 18s. 2d.

The numerical increase and the financial progress which our Society has made during these years are in keeping with the remarkable advances that have been made in the subjects for the promotion of which this Society exists. We know that no branch of medical or surgical science has developed during the past two decades with such rapidity as that of gynæcology, and we are conscious that, viewed from its surgical aspect, it has become, we might say, a perfect speciality. In attaining this prominent position, our Society can justly claim that its Fellows, past and present, have contributed their full share.

To-night, in the time at my disposal, I shall take note of some of the advances—to attempt them all would be impossible—which have been made during the last twenty years, paying particular attention to the evolution in technique during that time, and using by way of illustration, for the most part, two major operations. My treatment of the subject must be imperfect and fragmentary at the best, and I hope those Fellows who know the ground better than I do will bear with me.

In our volume of Transactions for 1883-84 not more than twenty specimens, removed by abdominal section, are recorded as having been exhibited, while in the volume of last session there are upwards of sixty recorded. This testifies to the great activity which now prevails in this department. In a record of cases treated by the late Dr Angus Macdonald in Ward 28, Royal Infirmary, from 1st November 1883 to 30th April 1884, the first point which strikes us is the small number of cases of abdominal section—four in six months—a number which nowadays would be considered by some operators to be only a good forenoon's work. Dr Macdonald, however, relates ten consecutive successful cases of laparotomy during the following.
six months. Of the four cases mentioned above, two were undertaken for the removal of ovarian tumours, and two were hysterectomies for fibroid tumours. Both the ovariotomies were difficult, on account of adhesions.

Twenty years ago, the number and character of ovarian tumours operated on differed to a great extent from those at the present time. Then, the tumours which came to the operator were comparatively few in number, were generally of large size, and were frequently complicated with formidable adhesions. Now, their number is legion; frequently they have not attained huge dimensions; adhesions are very often absent; and when present they are seldom so intimate and universal as those at the time of which I speak. The reason for this is to be found in the fact that practitioners are better educated; they are able to recognise tumours early in their development; they are aware that the sooner these tumours are removed the more certain will the recovery be; they know that tapping never cures an ovarian tumour, but brings about complications, and that such a method is only justifiable for tumours which cannot be removed. While this dictum regarding tapping is incontestible, we mention one condition in which the rule may be departed from, namely, where the tumour is removable, but when, from its size, the patient's heart, which may be fatty, is so much embarrassed and weakened, that operation would be attended by grave risk. In such a case, to tap the tumour a few days before removing it, so as to allow the heart to regain tone, is quite a justifiable proceeding.

Almost of equal importance to this question—that of tapping an ovarian tumour before removal—is the question of tapping during removal. Tapping or aspirating the cyst during ovariotomy is, we consider, the weak point of the operation; we see how frequently it is unsuccessfully accomplished. The walls of some ovarian cysts are so thin and friable that they do not embrace the cannula tight enough to
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prevent the escape of the fluid at the sides of the instrument; while in others the contents are too thick to run through the cannula, and require to be evacuated by enlarging the opening of the cyst with the knife. If the contents of the tumour are innocent, no harmful results ensue; but if, on the other hand, they are septic, or contain malignant elements, the results are otherwise. Leopold recognised this twenty years ago. In a paper read by him describing thirty laparotomies, he makes the statement, "Whenever it was at all possible, ovarian cysts were lifted out of the abdomen unpunctured." In his remarks on one of the recorded cases, Dr Macdonald mentioned that he was obliged to incise the cyst wall and break up its contents, and expressed some anxiety at finding that the fluid contents, when subjected to microscopic examination by Dr Foulis, contained sarcomatous elements.

After the abdomen is opened, while it is easy in many cases to diagnose, by well known physical signs, malignant degeneration of an ovarian tumour, yet, in many cases, to do so is impossible; for example, in the case of the papillary form when the papillary masses are within the cyst. The wise operator will remove all tumours entire when he is doubtful as to their contents; and if for any reason the fluid from such tumours should find its way into the wound or the peritoneal cavity, he will be careful to subject the peritoneal cavity to thorough irrigation before closing the wound. The second case of ovariotomy narrated by Dr Macdonald was one of great difficulty. The tumour was deeply placed in the pelvis; there were numerous adhesions, and much oozing, and at the completion of the operation a glass drainage-tube was inserted in the lower angle of the wound. The patient died from sepsis on the fourth day.

Dr Macdonald, commenting on the case, says: "I cannot help thinking that, notwithstanding the severity of the case, all might have gone well had we not had in the large ward some rather putrid cases. The drainage-tube seems to have
been a source through which the peritoneal fluids became septic. I need hardly say that we used every precaution within our power, by protecting the end of the tube from the air, to avoid this result. Be this as it may, it is evident that the patient died of septicæmia, in spite of all our efforts."

These remarks lead me to refer briefly to a matter which I consider of great importance, namely, the danger of infection being transmitted from a patient who is already septic to one who is not, and the danger of admitting septic patients into a ward occupied by patients who are aseptic, and on whom the surgeon hopes to perform an aseptic operation. Each septic patient is a centre of infection, and should be as severely isolated from patients who are free of infection as an infectious fever patient is separated from the rest of the community.

We know that ordinary air is full of micro-organisms, though for the most part they are non-pathogenic; but air in the vicinity of a stinking abscess or foul-smelling case of cancer of the cervix must be crowded with pathogenic bacteria, and must constitute a danger, even though the surgeon and his assistants have been careful not to come in contact with the patient or her discharges. There must also be a great risk of infection being conveyed by nurses who assist at operations, and who have also ward duties to perform.

I consider that the danger which these putrid cases entail is not confined to the time of the operation, but exists afterwards as well; the danger does not end with the closure of the wound. That patients who have been operated on are infected, to a certain degree, by these cases, is evidenced by the post-operative temperature charts in hospitals. There are frequent rises of temperature which, in the majority of cases, if not in all, are due to infection; and though in
most cases the patient's recovery is not interrupted, yet it has been the sad experience of most operators to have had a case go wrong and terminate fatally after the simplest and most correctly performed operation. Such calamities are, I believe, sometimes due to what one might term "hospitalism." In every hospital where surgical work is done there should be a ward set apart for septic cases, completely isolated, and worked by a staff of its own. These septic patients are seriously ill, and when they ask admittance to hospital they cannot be refused; but it is obviously unfair that other patients should, on account of these, run a risk which is preventable.

The most marked change in technique in the operation of ovariotomy, during the last twenty years, has been the almost complete abandonment of the drainage-tube. This remark also applies to other abdomino-pelvic operations. Between ten and twenty years ago, the drainage-tube was used in the majority of cases. Its employment, however, was evidence simply of imperfect technique. It has now been proved to be unnecessary, and to be, moreover, a channel of infection. It has, therefore, been given up except in rare cases, and in these it is usually carried out through the vaginal roof, a method advocated by Marion Sims many years ago, and at the time universally condemned.

Two of the four cases of abdominal section recorded during session 1883-84 were hysterectomies for the removal of fibroid tumours. In both, the pedicles were treated extraperitoneally by Kœberle's serré-nœud. At that time only such cases as presented a pedicle which could be constricted by wire, clamp, or elastic ligature were considered operable. Péan and Bantock, with the serré-nœud, Hegar with the elastic ligature, and Keith with his clamp, were doing good work. Hegar reports twelve cases with one death, Keith twenty-five cases with two deaths, while Bantock records fourteen cases with one fatal result.
But all operators longed for a reliable internal method; they felt the extraperitoneal methods were clumsy, and they hoped that, as in ovariotomy, the intraperitoneal method had been successfully evolved from the extraperitoneal; so, too, in myofibromata, some method would be devised by which the stump could be left with safety within the abdomen. Their great fear was haemorrhage from the stump, and septic infection through the cervical canal communicating with the vagina. They aimed at controlling the haemorrhage by strangulating the pedicle, and not by securing, as we now do, the vessels which supply it; while they thought it necessary to render the stump aseptic, which was really already aseptic, by cauterisation, the application of chloride of zinc, etc.

Schroeder, with others, believed that the extraperitoneal method would have to give way to the intraperitoneal, and he had already elaborated and practised with encouraging success his operation of tying the pedicle and dropping it, as in ovariotomy. The steps of this classical operation will be best understood from his own description, which was published in the British Medical Journal of 13th October 1883. He says: "I sever the appendages by first doubly ligaturing the infundibular pelvic ligament with its spermatic vessels, and dividing between these ligatures; then by repeating the same process with the round ligaments. After this has been executed on both sides, it is easy to separate the tumour from the surrounding tissue without causing any considerable haemorrhage; and now the indiarubber ligature is placed round its base. The tumour is then cut away, with the uterus, above this ligature. Next the cavity of the uterus, or the cervical canal, is cauterised with a 10 per cent. solution of carbolic acid, in order to destroy any infectious germs that may be present. The denuded surfaces (of the stump) are first united in the depth near to the mucous membrane of the uterus; these sutures are covered up by
several rows of other sutures, uniting the walls of the stump; finally, the peritoneum is pulled over the stump, and attached to it and to the peritoneum on the other side by a line of closely placed stitches. On the sides of the stump, at the spots on which the large blood-vessels have been divided, the tissues are firmly fastened to the stump by a separate deep suture. After removal of the indiarubber ligature, the stump is seen with a smooth covering of peritoneum, united by a neat row of sutures." Of sixty-six patients on whom he had operated, he had lost twenty (30 per cent.); of his last forty cases, he had only lost nine.

Schroeder also tells how he modifies his operation in the removal of intraligamentary tumours—tumours which at this time were considered inoperable by most surgeons. He also, in this paper, describes how he practises myomectomy in the case of a very large fibroid growing in the posterior lip of the cervix. He, in fact, demonstrated that it was possible to remove by enucleation and with the elastic ligature any fibroid tumour.

Dr Macdonald, in his remarks on his two cases of hysterectomy, discusses the possibility of oophorectomy as an alternate operation for arresting the growth of the tumours, pointing out that in each of his cases it would have been impossible to remove both ovaries.

At this time the operations of oophorectomy, originally introduced by Battey, and those for the removal of the uterine appendages introduced by Tait, were being practised with the object of diminishing the size of the growths and of establishing the menopause. Tait had not yet mastered the technique of hysterectomy. In a personal communication to Dr Bigelow, of Washington, in 1882, he says: "So far, removal of myomata by laparotomy has not been a successful operation. I think I have done about thirty cases with about ten deaths; this is rather over than under the mark. The best results have been
with the clamp, the worst with the ligature. When they are small I remove the appendages, and they do beautifully. When they are big I remove them, and when they have a decent pedicle they do very well; when they have not they die from haemorrhage." So, three years later, Tait publishes a list of fifty-eight cases in which he had removed the uterine appendages for myoma without a single death. He gives details of fifty cases, and claims to have had failure in only two instances. He condemns hysterectomy generally, but adds that there are some "cases in which the performance of the operation of removal of the uterine appendages does not arrest the growth of the tumour, and these cases must subsequently demand the greater operation. Other cases will also demand it when the tumour has grown after the menopause; in such, of course, removal of the appendages being altogether out of the question. But what I contend for is this, that if the removal of the appendages was performed early in the history of these cases," i.e., when they are small, "as it ought to be, very few would arrive at the necessity for the operation of hysterectomy."

The operation, as Tait pointed out, was especially applicable to small tumours. In these cases the appendages were accessible, and could with certainty be completely removed. Another class of cases were those tumours which grew between the layers of the broad ligament, because at this time their removal by hysterectomy was almost always followed by a fatal result.

But to return to the pedicle, in which the whole subsequent history of hysterectomy centres, we had in 1883 two methods of treatment—the extraperitoneal, by serré-nœud, clamp, or elastic ligature; and the intraperitoneal, as advocated by Schroeder. The results as to mortality were greatly in favour of the extraperitoneal method. Sepsis was the chief cause of death in both methods. The indications for operation were the same in both, namely, in cases where the tumour threatened the life of the patient or caused great suffering.
The interval from this time on till 1889, when a safe method of treating the stump intraperitoneally was discovered, may be called the transition period, in which various devices were tried in treating the stump without wire or clamp, and in such a way as to be secure from hæmorrhage. Kelly, in 1888, after treating the stump according to Schroeder's method, fixed it in the abdominal wound, and then stitched the parietal peritoneum round it. The stump was thus fixed extraperitoneally, and any bleeding or discharge from it was easily observed. His results were good. Polk about the same time introduced a method similar in principle to Kelly's. In 1889, Byford read a paper on a new method of treating the stump in abdominal hysterectomy. The method consisted in sewing up the stump somewhat after Schroeder's plan, separating the bladder from the uterus, opening the anterior fornix, turning the stump into the vagina, and fixing it there by pedicle pin introduced from the vaginal side. Up to this period, operators placed great importance on the vascularity of the uterine tissue. The principal danger of the operation was accounted to be that of primary or secondary hæmorrhage from the stump, hence the temporary use of the elastic ligature, and the effort made to ligate every particle of tissue in the broad ligaments.

Stimson of New York, in 1889, demonstrated that by tying off the two uterine and the two ovarian arteries, complete hæmostasis of the uterus was effected. He showed the practicability of this method in performing panhysterectomy, and suggested that it should be applied to the operation of supravaginal hysterectomy.

At a meeting of the British Gynæecological Society, held on 26th February 1890, Dr Reeves mentioned that he had removed a tumour which extended above the umbilicus. After tying the broad ligament, he tied each uterine artery separately, and treated the stump after the intraperitoneal
method. He destroyed the cervical canal by means of Paquelin’s cauterity, but did not cover it over with peritoneum. Milton, in January 1890, performed his first operation of supravaginal hysterectomy. The steps of the operation, as narrated by him, are nearly identical with those performed at the present time, and his description might serve in any modern text-book to teach one the technique of our present-day operation. He ligated the ovarian vessels on both sides, divided the peritoneum anteriorly, and pushed it down with the bladder; he then made a posterior peritoneal flap, after which he tied the uterine arteries separately, and then divided the cervix transversely; lastly, he united the peritoneal flaps over the stump. In a paper in the *Lancet* of November 1890, he narrates three more cases similarly treated, and I think he must justly claim to have been the first to perform and describe the perfected operation of supravaginal hysterectomy. Baer’s first operation was performed on 2nd October 1891, and though it differed slightly in technique, its principles are the same as those of Milton’s.

In 1896, Kelly introduced his side-to-side method of amputation, making the removal of intraligamentous tumours an easy matter, and adding the finishing touch to an operation which may technically, at least, be considered perfect.

This story of the stump illustrates, perhaps better than anything else, the progress of operative gynaecology during the last twenty years.

In its evolution many able men have taken part, and many lives have been lost. From methods crude and difficult, there has evolved one of great simplicity. The simplicity and effectiveness of the method have made the operation as easy as ovariotomy, and given to it as small a mortality. It has brought the removal of all fibroid tumours, however complicated in their relation, within the range of practicability. The revolution in the process of evolution was the recognition of the fact that
ligature of the uterine arteries stopped bleeding from the stump. Some of the earlier operators tied these vessels, but had not confidence in the results, and used additional means.

While this operation is one of which all those who have had any share in bringing it to perfection may be justly proud, the very success with which it has been crowned should make us pause and ask ourselves—Does not the simplicity and safety of this operation bring with it some danger? May we not be misled and tempted by the skill and facility with which this method enables us to remove the uterus? Will it not tempt us to remove the uterus sometimes when it is unnecessary to do so? I fear this danger is not imaginary, that it is one we must always be on our guard against, while we must never forget that the successful removal of an organ is not always a triumph of art, but sometimes a confession of defeat.

This important question leads us to consider the position in which we now stand in regard to major operations, not only on the uterus, but also on other organs. This radical operation of supravaginal hysterectomy, beautiful and simple though it be, is not the operation of election for fibromyomata, but is only the alternative when the conservative operation of myomectomy is impracticable. Myomectomy, which is the enucleation of a fibroid tumour without sacrificing the uterus, is the ideal operation for fibroids, and it is the duty of the operator to enlarge the indications for it, and to narrow those for the radical operation. And, to reach this end, it would make an interesting and useful research if those of us who have removed a number of tumours by supravaginal hysterectomy would dissect them carefully, and see how many of them might have been treated by myomectomy. It aims at removing the disease while conserving the functions; therefore it is important that it should be carried out whenever practicable in women
during the child-bearing period. In the case of women who are well over 40, and in that of a tumour which has attained the size of a six months' pregnancy, supravaginal hysterectomy is to be preferred. But if myomectomy is to succeed as it deserves, tumours must be recognised early—while they are yet small; and as years ago we heard the cry, "a plea for early ovariectomy," so it is possible that, at an early date, we may hear a similar cry for early myomectomy.

There is no more interesting subject than the future treatment of fibroids. Twenty years at least have been spent in perfecting the operation of supravaginal hysterectomy. Will the operation, twenty years hence, be abolished, and will such an operation as myomectomy reign supreme? My successor in this chair twenty years hence will be able to answer the question.

The aim of the early operators was to conserve life by removing conditions which endangered life; later, indications were extended to include those conditions which, though not threatening life, interfered with the comfort and well-being of the patient, and now the operator endeavours to remove the sufferings of the patient, to conserve not only her life, but also the functions of the organs operated on.

The affections of the tubes and ovaries lend themselves to the carrying-out of this, the highest ideal of surgery, and the important functions which they perform make conservatism very desirable. The ovaries are of paramount importance, as on them depend ovulation and menstruation, while without them the tubes and uterus are useless. The ovaries, in addition, secrete a substance which is believed to be of importance for metabolism and for the maintenance of nervous equilibrium. To you, I need not say how desirable it is, especially in young women, to preserve these functions wherever possible. You know as well as I do how much the well-being and happiness of a woman depend on the healthy performance of
her peculiar functions, and you are all familiar with the severe nervous disturbances and extreme physical discomfort which in some instances follow the artificially induced menopause.

Fortunately, the ovarian functions can be conserved, and such calamitous conditions averted, by the preservation of a small piece of sound ovarian tissue; and this can be accomplished in the majority of cases of ovarian disease.

The function of the tube is that of a carrier of the ova, and is of importance only where the question of the possibility of conception is concerned. The tube is a delicate structure, and its function may be easily interfered with. It is, however, amenable to conservative treatment; and such operations as separating adhesions, making a new ostium in a closed tube, and resecting diseased tubes, have frequently been performed with good results.

Before leaving this subject, I might briefly refer to a further advance which has been attempted in conservatism, in what is known as ovarian grafting. I cannot do better than quote Morris of New York, who is doing good experimental work in this line. "If, for instance, in a case of pyosalpinx, we are obliged to remove the ovaries and oviducts en masse, as often occurs, we can place part of a fairly good ovary in warm saline solution, until the rest of the work is completed, and then graft this piece of ovary partly beneath the peritoneum, at some point near its original site, before closing the abdomen. The ovarian graft will be the means of preventing a precipitate menopause, the patient will continue to menstruate, and there is a possibility of pregnancy occurring if the stumps of the oviduct remain patent, as they commonly do after absorption of catgut ligatures. This refers chiefly to grafting in a piece of the patient's own ovary. If she receives a graft from another patient, operated upon at the same time for the purpose, the patient may continue to menstruate for some months
BY DR N. T. BREWIS.

and to have the benefit of internal ovarian secretion. It may even be possible for her to become pregnant, before the graft has degenerated, but this has occurred as yet only in rabbits, and very shortly after the grafts were introduced." He says further: "I wish simply to impress the idea that we are to graft back a part of a woman's ovary, whenever this can be done safely, in cases in which the loss of all ovarian tissue would be a misfortune."

I might also mention a method which indicates another step in the same direction, namely, the intra-uterine implantation of ovarian tissue. This procedure consists in making an incision in the fundus of the uterus, preparing a place on its inner surface for the reception of the ovary, or portion of ovary, and fastening it there with deep and superficial stitches. Palmer reports that after forty-eight implantations which he had been able to follow, twenty-eight had become pregnant, and of these twenty-five went to term.

I have said enough about conservatism to indicate to you that, in my opinion, it is in pursuit of it that our efforts must be directed in the future. We must apply its principles to all operations which admit of it. Many cases are not suitable for it, and in some the more radical the operation the more real is the conservatism; but, wherever possible, our aim should be to remove the diseased tissue and to leave whatever is sound.

I am well aware that the reports of conservatism in adnexal disease are not so encouraging as we would like. In a minority of cases where one ovary or a portion of an ovary has been left behind, pain persists, but a proportion quite as large has been found to suffer after complete removal of the appendages. In about 5 per cent. of cases the disease has recurred, and operators have been obliged to re-open the abdomen to effect a cure. This is perhaps the most serious objection; but I think the recurrence in these cases is due more to faulty method.
than to the principle of conservatism. With increased experience and further improvement in technique, we may fain hope that even these disappointments will no longer be experienced.

In all cases where the surgeon thinks of carrying out conservative procedures, he should take the patient into his confidence, and let her decide whether or not she wishes him, even at the risk of a second operation, to attempt to save what he can.

In our Society it is only to be expected that the training of our students in obstetrics and gynaecology should frequently be referred to in addresses from the chair. The importance of the subject is vital, and it is incumbent on us that we should not only be interested in the matter, but should take an active part in whatever makes for its improvement. The suggestions from this chair, on former occasions, have already borne good fruit. We all rejoice to think that, through the exertions of some of our Fellows, our students have now facilities for obtaining satisfactory instruction in practical obstetrics. We all rejoice and are thankful for the institution which has recently been acquired for the purpose, and dedicated to the memory of our beloved Milne Murray. The teaching of our students was a subject ever near his heart, and no more fitting memorial could have been thought of. For his sake, and for the sake of the work, our Fellows will always guard the Milne Murray Lodge with zealous and loving care.

While the teaching of practical obstetrics has now received adequate attention, it is our duty to turn to the subject of practical gynaecology, and see if something cannot be suggested whereby the teaching of this important branch would be improved.

We may consider the subject from two aspects—First, from the aspect of the student who is to become a general practi-
tioner; secondly, from the aspect of the man who aims at being a specialist.

It is with the first class that we are chiefly concerned.

I do not think our students will leave the university endowed with a knowledge of practical gynæcology, until attendance on a course of clinical gynæcology is made compulsory, and each student is examined on the subject in his final examination. The methods adopted in the teaching of clinical medicine and clinical surgery might be applied to those of clinical gynæcology. I see no reason why two students should not be attached to each gynæcological bed, as is practised in the medical and surgical wards. During the session each student should have had an opportunity of becoming familiar with a variety of diseases, and with the additional instruction he receives at cliniques and in the operation theatre, he should in six months have a fair knowledge of practical gynæcology. I know the objection will occur to some, that patients would not like this arrangement. I think otherwise. In my dispensary practice, the number of patients who attended was as large when I had students as when I had not, and I have noticed in the wards that patients are rather pleased that students should interest themselves in their cases.

The training of a man who aims at being a specialist is altogether different. It is a post-graduate undertaking, and depends entirely on the ambition and efforts of the man himself.

His course of instruction must essentially be, primarily, that of a general surgeon. I fear that major gynæcology may ultimately pass into the hands of the general surgeon, if our young gynæcologists are not careful to insure themselves with a thorough surgical training against this danger.

When a gynæcologist opens the abdomen, to remove an ovarian or a uterine tumour, he should feel himself qualified to deal with any complication that is present, such as a
resection of the bowel. If I might indicate the course which a young gynaecologist might follow, I would recommend him first to spend some months as a demonstrator in the anatomical rooms; then to undertake the duties of a house surgeon in general surgical wards, and also in the maternity hospital, before he becomes a house surgeon in the gynaecological wards. If he chooses the lot of a gynaecological surgeon, he will have a life of exceptional anxiety, neutralised, however, by much satisfaction. His aim should be to do good work and to do it well; his prayer should be to be delivered from vanity and carelessness; and when reverses come, as come they must, he will

"Rise from disaster and defeats the stronger."

Professor Simpson, seconded by Sir Halliday Croom, moved a hearty vote of thanks to the President.

V. HYDROCEPHALIC INFANT DELIVERED BY SPINAL TAPPING.

By J. W. Ballantyne, M.D., F.R.C.P.E., Lecturer on Midwifery, Medical College for Women, and Surgeon's Hall, Edinburgh; Examiner in Midwifery in the University of Edinburgh; Physician, Royal Maternity Hospital, Edinburgh.

The delivery of the after-coming head is often a matter requiring skilful manipulation, and the employment of the forceps is sometimes necessary. If, however, the head happen to be hydrocephalic as well as after-coming, the most careful manipulation will often fail to deliver it, and the use of forceps becomes a danger. The value of the method suggested by Van Huevel and carried out by Tarnier will under these circumstances be easily appreciated. As that method does not appear to be widely known or often practised in this country, it has seemed to me that the report of the following
case may serve a useful purpose in bringing it prominently before the profession.

On the night of 15th August 1904, I was hurriedly summoned to the Royal Maternity Hospital, Dr Hy. H. Robarts, one of the resident surgeons, informing me by telephone that a woman was being sent in with her baby born as far as the shoulders but with the head still above the pelvic brim. On my arrival at the hospital I was put in possession of the following facts regarding the case. The patient was a married woman, 28 years of age, who had had three previous confinements and no miscarriages; her first child, a girl, was now six years old, healthy, born in a normal labour; her second, also a girl, was born dead four years ago, head presentation, no further details; her third child, a male, was born two and a half years ago, normal labour, now alive and healthy. During the present pregnancy, the fourth, the patient had complained greatly of pain in the left side of the abdomen, which had prevented her sleeping at night; she had also noticed that the abdomen was larger than in her previous pregnancies. She was under the care of a medical man in one of the suburbs of Edinburgh; he was called to her on 15th August, labour pains having commenced on the evening of the 14th. In the afternoon the os was fully dilated and a transverse presentation was diagnosed, position left acromio-anterior; on account of the large size of the abdomen, the presence of twins was suspected. At 7 P.M. the medical attendant ruptured the membranes, performed version, and brought down the feet without much difficulty; the body was also brought down, and the arms with considerable exertion, but no efforts could extract the head. Another doctor was summoned, but even with his help, the head remained firmly fixed above the pelvic brim. Attempts were twice made to apply the forceps, but with no success. The patient was then sent into the Maternity Hospital, where she arrived at 9:50 P.M.
On her arrival at the hospital, the patient was in a very
collapsed state; her pulse was 140 and thready; her lips and
face were pale, the nose was pinched and the eyes hollow.
She complained of no pains. On abdominal palpation I felt
the uterus fairly well contracted, and as large as if it had a
full-time foetus in it; but protruding from the vulva were the
body and limbs of a male infant. In the upper part of the
uterine tumour was a soft area which I regarded as blood-clot
above the head; in the lower part I thought I detected a
crackling sensation, such as one gets on palpating a hydro-
cephalic head. The body of the child was lying transversely
in the pelvic cavity, the back being to the right; the cord
was not pulsating. I passed my fingers up behind the fetal
back, and felt a well-ossified portion of the occipital bone; I
thought I could feel a membranous part beyond it.

By this time I had diagnosed obstruction in labour due to
large size of the head, and I naturally thought first of hydro-
cephalus. I could not, however, absolutely exclude some rarer
conditions, such as meningocele, encephalocele, cranial or facial
teratoma, or diencephalus with single body. I said, therefore,
to the house surgeons and to the resident pupils from Milne
Murray Lodge, that I intended to treat the case as if it
were one of hydrocephalus, keeping in mind the comparative
frequency of that state and the great rarity of the others.

The nature of the treatment then engaged my attention. It
was obvious that further traction upon the trunk of the child was
inadvisable: it had already been practised for hours; the attachment
of the head to the trunk had been weakened, so that there was
fear of separating the former and leaving it in the uterus, and
there was the rapidly increasing risk of uterine rupture. To
tap the head suggested itself as the best plan to pursue; but
it seemed to me at the same time that the further intra-
vaginal and intra-uterine manipulation that it would involve,
the probability that the occipital bone would require to be
pierced with a perforator, and the collapsed state of the patient, all combined to make a very grave prognosis. It was then that the illustration in Tarnier and Budin’s *Traité de l’art des Accouchements*¹ representing tapping of the spine in a case of retained hydrocephalic head came into my mind: that illustration, as some of my readers will remember, shows an infant born as far as the shoulders; the spine has been opened into in the dorsal region, and a stream of fluid is issuing through a cannula which has been pushed into the spinal canal; the figure is entitled “Procédé de Van Huevel-Tarnier.” It seemed to me at once that if I could by this method draw off the fluid from the cranial cavity by paracentesis of the spinal canal I should be giving the patient a much better chance than by further interference through the vagina. The infant was already dead, so I had only the mother to consider.

By gentle manipulation I brought the infant’s body round, so that the occiput lay above the symphysis pubis, and the back was in the middle line anteriorly. Urine had been drawn off by the catheter, and the patient was under chloroform, but not deeply. I took an ordinary scalpel and made a transverse incision over the interspace between the sixth and seventh dorsal vertebrae in the interscapular region. I then cut down into the spinal canal; but no fluid appeared. I next took a long silver catheter, with one large and several small openings in its distal end, and insinuated it into the spinal canal, bending the back of the infant at the time so as to make the spinal curves and those of the catheter to coincide. I calculated that the tip of the instrument was inside the cranium, but still no fluid issued. I then turned the catheter so as to make the point pass forwards in the cranial cavity; I felt some resistance, which was overcome; and then clear fluid with a slightly yellowish tinge began to run freely from the catheter. Dr Robarts aided

¹ Vol. iv., p. 32, 1901.
the emptying of the head by supra-pubic pressure. When 36 ounces of fluid had thus been drawn off I seized the lower limbs and carried them forward over the symphysis pubis, and with very slight traction delivered the infant actually with one hand, aided by the supra-pubic pressure which Dr Robarts was exercising. A large quantity of blood-clot came away with the head, and the placenta was born almost immediately. The uterus contracted fairly well. A large intra-uterine lysol douche was given, the fluid returning freely. The child was born at 10:20 p.m., or half an hour after her admission to the hospital.

Four grains of ergotin were injected hypodermically, and repeated in about an hour. Strychnine, a fortieth of a grain, was also given. The uterus softened several times, but the bleeding was not great. The pulse, however, was 150, and the facies not at all good, so I ordered a saline by the bowel, which was given. The patient was then put to bed, and some brandy given, and afterwards some hot milk; with the help of bromide of potash and chloral she slept well.

The infant (Fig. 1), a male, was, save for the hydrocephalus, well formed; there was no spina bifida or other external deformity. The length was 22 inches, and the weight, including 36 ounces of fluid drawn off, was 12 lbs. The head was collapsed but quite intact, owing to the nature of the operation which had been performed (Fig. 2). The two halves of the frontal bone were widely separated; the parietals, which measured five inches square, were separated from all the neighbouring bones by sutures one and a half inches wide. The supra-occiput was loose, being separated from the basi-occiput. All the cranial bones were well ossified. Some of the measurements of the head may be mentioned; the circumference was 21½ inches; from the root of the neck to the glabella (measured over the vertex) was 16½ inches; from the tip of the occiput to the glabella was 5½ inches; the bi-parietal diameter was 6½ inches; the bi-temporal was 5 inches; and the occipito mental and
trachelo-bregmatic were both 6½. No eyeballs were visible in the orbits; the orbital fissures were short, measuring only ½ inch. The placenta weighed 2 lbs. 4 oza., and the cord was 28 inches long.

The mother's recovery may be briefly summarised. On 16th August, the first day of the puerperium, the temperature was 100, and the pulse varied from 110 to 104; the patient suffered no pain; she was given brandy (half an ounce) every four hours. On the second day of the puerperium the temperature fell to 97°, rising in the evening to 100°6°; the pulse varied from 88 to 100; Henry's solution was given in the evening, and an enema next morning. On the third day, 18th August, the temperature varied from 98·4 to 99·8; the bowels were moved, but not very freely, so a second dose of Henry's solution was given; the pulse varied from 86 to 92; there had been no difficulty with micturition. On the fourth day there was slight foetor of the lochia, so vaginal douching twice daily (carbolic, 1 to 40) was begun and continued for twelve days; with the help of an enema the bowels were well moved; the temperature showed an evening rise to 100, and the pulse varied from 80 to 88. During the following three days (20th, 21st, and 22nd August) the morning temperature was normal and the evening 100; thereafter it was practically normal; the lochial discharge gradually lost its foetor and ceased; there was never any uterine tenderness, and after the first few days the involution proceeded well. The patient left the hospital on the 15th day with a pulse of 72 and a normal temperature. It may be added that she had ergot and iron during most of the puerperium, and on one occasion, the 7th day, had to have the catheter.

According to Tarnier and Budin¹ the procedure, which was adopted with such complete success in this case, was proposed by J. Vanhuevel in 1848,² and actually carried out by Tarnier in 1868. Hubert,³ however, claims for Lacoux the honour of

² Presse méd. belge, i., 279, 343, 1848-9.
³ Cours d'accouchements, ii., 254, 268, 1878.
establishing it as a useful obstetric operation. At any rate, it would appear to have been adopted by Tarnier’s pupils and employed by them when occasion arose. N. Charles\(^1\) used the method successfully in 1881; and in the same year J. Dougall,\(^2\) in the account which he gives of a hydrocephalic foetus with spina bifida delivered as a breech, seems to have thought, after the labour was over, that he might have facilitated the extraction of the infant by draining off the cranial fluid through an opening in the sac of the spinal hernia. I may quote Dougall’s words: “In this case, had the labour not finished when it did, I would have used the perforator. It occurred to me after, that I had neglected an opportunity of making one of the complications obviate the other. This could have been done after the child was dead, by opening the tumour at the bifid spine, and so tapping the cranium through the cerebro-spinal canal. This operation might probably be performed in lieu of craniotomy in foetal hydrocephalus, even where the spine is not bifid. An incision could be made into the cerebro-spinal canal about the dorsal region, after turning, or in a breech presentation, and the cranium emptied of its superfluous fluid thereby.”

A recent case in which spinal tapping was employed for the delivery of the hydrocephalic after-coming head was that reported by Dr Ira G. Stone in 1897\(^3\); Stone had only a soft rubber catheter with him, so he stiffened it by placing a uterine sound inside it, and was thus able to pass it up the spinal canal into the cranial interior. Another case seems to have been reported by B. Pozzoli.\(^4\) In one instance, that recorded by Oui,\(^5\) the manoeuvre failed; the reason was found to be a

\(^1\) *Jour. d'accouch.*, Liège, ii., 41, 1881.
\(^4\) *Lucina*, Bologna, iv., 167, 1899.
\(^5\) *Arch. de tocol.*, xviii., 617, 1891.
fracture of the spine in the cervical region with separation of the two parts, which made it practically impossible for the sound to follow the canal and so reach the cranium. This case affords a good argument for early use of this method, and for the avoidance of indiscriminate traction upon the foetal trunk.

The advantages of spinal tapping for the delivery of the after-coming head in hydrocephalus are so obvious that I need scarcely enumerate them. There is, first, the advantage of operating upon parts which are external and visible; there is, second, the accessibility of the armamentarium required—a knife and a catheter; there is, third, the rapidity and completeness of the evacuation of the cranium thus obtained; and there is, fourth, the avoidance of any further internal interference with hands or instruments when all such interference is of necessity fraught with danger. It is by no means an easy or a safe procedure to perforate a hydrocephalic head behind the ear or through the occiput when prolonged traction has already been made upon the trunk, when the forceps has perhaps been thrust once or twice into the uterus, and when the operator has the dread of uterine rupture prominent in his mind; tapping the spinal canal at once easily and safely removes the whole difficulty, and greatly reduces the after risks. What cleidotomy has done for the delivery of the shoulders after craniotomy or basilysis, spinal paracentesis promises to do for the extraction of the after-coming hydrocephalic head; both are scientific and elegant methods of overcoming difficulties which are often attacked by force, ill-regulated and misapplied, and excessive.

Professor Simpson was sure that all were delighted with and greatly indebted to Dr Ballantyne for the interesting paper he had just read on hydrocephalus. It was rare that such a case was brought before them. At a graduation examination,
CASE OF CÆSARIAN SECTION AT FULL TERM,

when a candidate was asked how he would recognise that the after-coming head was hydrocephalic, the Irish reply was suggested, "Because it was not after coming." He quite agreed that Dr Ballantyne's successful method of treatment was the best that could possibly have been carried out in his case, as the woman was in danger, and the life of the child was no longer to be considered.

Dr Berry Hart instanced a case to which he was called. It was one of a very large after-coming head, and he had to perforate, but found no great difficulty in doing so.

Dr Ritchie thought that in view of the previous manipulations, Dr Ballantyne did what was best for the woman. Had he attempted to perforate, she might have been placed in very great danger.

Dr J. W. Ballantyne, in reply, stated that his reasons for tapping the spinal canal were the extent of the manipulations which the patient had undergone, the collapsed state of the woman, and the danger of perforating the uterus as well as the head. He had no doubt in his mind that after so much delay his only course was to use the catheter, particularly as there was no chance of the child being born alive.

VI. INTERESTING CASE OF CÆSARIAN SECTION AT FULL TERM. PATIENT HAD TWO UTERI AND TWO VAGINÆ. THE SECOND UTERUS WAS MYOMATOUS, AND WAS IMPACTED IN THE PELVIS: IT COMPLETELY OBSTRUCTED LABOUR.

By R. P. Ranken Lyle, M.D., Ch.B., Newcastle-on-Tyne.

Mrs O., age 31, married seven years, 5 feet 7 inches high, 11 stones in weight, and of good physical development.

Previous history:—The patient had a three months' abortion in July 1900, another in March 1901, and another in September 1902. After the third abortion she suffered from prolapse of
the uterus—the cervix being visible at the vulva; for this she was treated by a Smith-Hodge pessary, which she wore until 8th April 1903, and which gave a satisfactory result, as she did not complain of any discomfort after or since its removal. During all this treatment nothing abnormal about the patient was discovered.

During the afternoon of the 28th of March 1904, Dr Adamson was called to see her, and found her commencing labour at full term. Having made a vaginal examination, he found the os uteri was about the size of a florin, and was displaced forwards by an irregular nodulated hard mass, about the size of a closed fist, lying immediately in front of the sacrum. This he took for a mass of hardened feces in the rectum, and he ordered an aperient and a soap and water enema. Some hours later he saw her again; the bowels had been well moved twice, but this hard mass was just as before. As the pains were neither frequent nor strong, and as the patient was greatly inclined to sleep, Dr Adamson did not anticipate anything serious. Returning two hours later, the pains were stronger and more frequent, the fetal head was still above the brim of the pelvis, and was obstructed in its descent by the mass. He then called Dr Robinson, and they decided to have a further opinion.

On examination, I found the mass as already described, and from the vagina it felt like a mass of hardened feces in the rectum; the rectum, however, on examination, was found empty. The diagnosis of a pedunculated myomatous mass in Douglas' pouch was made. The patient appeared in considerable distress, and the pulse was 120. The head was just above the pelvic brim, and as this mass constituted an effectual barrier to delivery per vías naturales, it was decided to do Caesarian section at once.

The catheter was passed, and about five ounces of urine came away.
Dr Robinson anaesthetised the patient with chloroform, and I was assisted by Dr J. W. Leech.

The abdomen was opened by a mesial incision extending from one inch above the umbilicus to two inches above the pubis. The bladder was found considerably distended with urine; it was in front and to the left of the uterus, and had no contractile power. The catheter was again passed, and the bladder was emptied by compression. The uterus was opened in front, the child removed, and the placenta, which was on the posterior surface of the uterus, also removed. The uterine wound was sutured with interrupted catgut sutures, care being taken not to pass them into the cavity of the uterus, the peritoneum was further sutured by means of a blanket stitch.

The mass was then lifted out of Douglas' pouch, and proved to be a myomatous uterus, independent of the other one, and attached to the top of the vagina on its right side. There was an ovary and tube on its outer side, but none on its inner. Supra-vaginal amputation was performed in the usual manner, and on further examination the other uterus was found to have only one tube and ovary, and that on its outer side.

The abdomen was closed in three layers. The time occupied from the commencement of the anaesthetic to the insertion of the last suture was 55 minutes.

After history:—1st day.—Patient recovered rapidly after the operation, no vomiting or pain, passed urine naturally, temperature 100·2° F., pulse 112, lochia free. Patient was given milk, soda water, and whisky.

2nd day.—Passed a restless night, complaining of abdominal pain and vomiting occasionally; much improved, however, during the day; lochia scanty; slept three hours during the afternoon, and on wakening passed a large quantity of flatus. Bowels not moved. Slight jaundice. Was given milk, soda water, whisky, and tea. Also five grains of calomel.
3rd day.—Passed another restless night, occasional vomiting, passed urine freely, bowels not opened, abdominal pain much less. Enema of turpentine and castor oil, good result, patient slept most of the day.

4th day.—Passed a good night, slept well, no vomiting, took nourishment well. Further progress excellent. Stitches removed on the tenth day, wound perfectly healed.

Patient and infant did well.

During the patient’s convalescence, Dr Adamson kindly gave me permission to see and examine her vaginally. On introducing two fingers transversely into the vagina, I found my fingers separated by a septum, and at the end of each canal was a distinct and separate cervix. The septum extended down to the uro-genital orifice, and at its lower end was attached in front to the vestibule and posteriorly to the perineum.

The President was sure that they all ought to thank Dr Lyle for coming from Newcastle to read such an interesting and valuable paper before them.
MEETING II.—DECEMBER 14, 1904.

Dr N. T. Brewis, President, in the Chair.

I. The following gentlemen were elected Ordinary Fellows of the Society:—Lewis Beesly, L.R.C.P., L.R.C.S.E., 21 West Hill, St Leonards; James C. J. Macnab, M.B., C.M., F.R.C.S.E., The Towers, Dysart, Fife.

II. The President showed—(a) THREE EXAMPLES OF CERVICAL FIBROID TUMOURS, removed by hysterectomy. No. 1 grew from the posterior lip of the cervix, and gave rise to retention of urine. Until this symptom occurred the patient had no idea that a growth was present. The tumour could have been removed by myomectomy, but as the patient was over 50 years of age, complete hysterectomy was preferred. No. 2 grew in the posterior portion of the cervix, and attained a large size. The anterior lip was elongated and thinned out in the shape of a horseshoe. The leading symptom was severe hæmorrhage. The patient was advanced in years. No. 3 developed in the right side of the cervix and blocked the pelvis, causing interference with micturition and defaecation. She had also been troubled for years with severe sickness and frequent retching, and was sent by her medical adviser to a surgeon in town to have the operation of gastro-enterostomy performed. He, however, correctly attributed the gastric disturbance to reflex influences in connection with the tumour, and since its removal the sickness had entirely disappeared. (b) A TUBAL GESTATION, which was of interest on account of its being the second which Dr Brewis had removed by the vaginal route from the same patient. (c) A TUBERCULOUS CERVIX. The patient was a very anæmic woman of 30 years of age, and had not menstruated for 3 years. The cervix had all the appearance of one affected with carcinoma, but on rough handling there was no bleeding. This feature, and the
presence of a carious affection of the elbow, led to the diagnosis of tuberculosis, which was confirmed by microscopic examination.

III. Professor Simpson showed a uterus containing a series of fibroid tumours in the walls, and one larger tumour the size of a child's head with a twisted pedicle attached to the fundus. The exhibition of this specimen had been intimated with a view to showing it when Sir Halliday Croom read his paper on the subject. It came from a woman, 48 years of age. Abdominal and uterine symptoms were somewhat vague. On abdominal examination there appeared to be some matting of the tissues together round a tumour rising up towards the umbilicus. On pelvic examination, a fibroid mass was felt in the vaginal region, and as the pain and distress were more than common, he had opened the abdomen and found this growth. On attempting to cut away the tumour, he found it was attached to the uterus by a twisted pedicle, so that he had to cut the uterus out altogether, which was done without much difficulty. He left the ovaries, because there seemed to be no special reason for removing them. Other structures were quite healthy, and the patient made a smooth recovery.

IV. Dr Haultain showed—(a) Five cases of cervical fibroid removed by hysterectomy; (b) tubal gestation, ruptured after fourteen days' amenorrhoea; (c) tubal pregnancy and pyosalpinx in the same tube.

V. Dr Fordyce showed—(a) a small fibroid tumour of the ovary; (b) commencing gangrene of a fibroid, due to twisting of the pedicle.

VI. Dr Sym desired to bring before the Society a specimen which was somewhat rare, viz., vulvar epithelioma. This case,
after consultation, was operated on by the President, Dr Brewis, with eminent success some four weeks ago. The main items of the case were:—The long duration (some three years) before it was seen, the little annoyance caused to the patient, and the absolute negation of glandular involvement. The specimen had been mounted in such a way as to show the papillomatous condition, and the appearance under the microscope showed that the tumour was of the squamous variety of epithelioma, as might be expected.

VII. IN DEFENCE OF THE PESSARY.

By Geo. Granville Bantock, M.D., F.R.C.S.Ed.

In the course of this year two papers have appeared on the subject of the use of the pessary, the one entitled “On the application of Pessaries and their Dangers,”¹ the other “Pessaries: their Uses and Limitations.”² Both of these contain statements which challenge criticism.

With regard to the dangers of the pessary it would be quite as much to the point to speak of the danger of the scalpel. The dangers arising from the use of the pessary are due to ignorance, want of skill, or carelessness on the part of the practitioner, or ignorance and carelessness on the part of the patient. The practitioner is either ignorant of the principles of its proper use, or deficient in skill in employing it, or careless as to the instructions he gives the patient; or the latter, wholly ignorant of the subject, is careless in carrying out her instructions. Of all of these conditions I have met with frequent—much too frequent—instances.

The authors of these papers seem to have brought together the possibilities of danger as a peg on which to hang a plea for surgical interference, but they were unable to produce

² Dr Giles, Med. Press and Circular.
any evidence in support of their argument. They are much taken up with "the pathological conditions (in the words of one of them) which contra-indicate the use of any pessary, and where its presence constitutes a distinct danger." Surely the use of a pessary under these circumstances must be regarded as an indication of gross incompetence.

With regard to their "uses and limitations," I am in accord with much of the argument of the writer, but when he speaks of them as a necessary evil, I entirely disagree with him. If this be correct, then, any operation or method of instrumental treatment is a necessary evil—even the wearing of a set of artificial teeth.

Now there are only four conditions affecting the uterus to which the use of a pessary is applicable. These are uncomplicated retroversion, anteversion, retroflexion, and prolapse. Perhaps I ought to include elongation of the cervix; but as it is usually associated with some prolapse of the whole organ, it scarcely deserves to be erected into a separate class.

The enumeration of the various pathological conditions that may be associated with these serves only to obscure the subject, for they, not the displacement, become the subject of our solicitude. But the examples of the abuse of the pessary enumerated by this author are quite to the point. When, however, he says that "properly fitting pessaries, rightly applied, have enough to answer for in the way of drawbacks and complications," I find another point for disagreement.

In Schultze's work on *Displacements of the Uterus*, sixty-six pages are devoted to the pathology and terminology; yet these subjects can, for practical purposes, be disposed of in a few lines, or, at most, pages.

It may seem a trifling with the subject to ask the question, What is a displacement? But it is not so, as a proper answer to this question is absolutely necessary.
A displacement, properly so called, is a departure of the uterus from its normal position. Hence there is in reality only one form of displacement, viz., retroversion. I am glad to find that there is a much more general acknowledgment that anteversion of the uterus is not a pathological condition per se. This is the position I took up nearly a quarter of a century ago, but it has not yet met with acceptance by the author of the first paper.

The normal position of the uterus with regard to the axis of the vagina is one of anteversion, and to speak of anteversion as a displacement is obviously incorrect. Amongst writers on this subject generally—and this is characteristic of the two above referred to, no distinction is drawn between retroversion and retroflexion. Schultze, in one of his tables, groups these under the head of retroflexions, and in another brackets them. Now, a retroversion means a turning backwards, and a retroflexion a bending backwards, of the organ. This is a distinction with a mighty difference, and ought to be kept clearly in view. No work with which I am acquainted, with the exception of that of Hart and Barbour, clearly observes this distinction. Others use the terms as being synonymous. Hence we find the greatest discrepancy as to their relative frequency. This is seen in a table of Schultze's, in which he gives, under the head of retroflexion, the experience of various authors, the frequency ranging from 12 to 198 "per 1000 cases of diseases of women," from 200 to 297 "per 1000 displacements," and from 84 to 550 "per 1000 flexions."

Strange to say, the distinction between anteversion and anteflexion seems to be observed. Of the first, Klob says, "As a matter of course anteversion cannot attain a very high degree." To this I may add that any exaggeration of this, which I call the normal condition, will be due to a pathological state which then becomes the point for consideration.
I do not know why so many gynaecologists of the day should persist in saying that anteflexion is the normal form of the virgin uterus. It is not so described in Quain's Anatomy, but is represented as being quite straight. No notice appears to have been taken of the special investigation of Bandl, who, as the result of post-mortem examination of a large number of cases, arrived at the following conclusions. Thus he says, "In the new-born the uterus was partly straight, partly in slight anteflexion, lying in the pelvic axis." "In older children, in whom the body of the uterus has acquired greater firmness, that organ is far more frequently found straight." "The straight form of the uterus is frequent as compared with the anteflexed."

A great deal has been written about the causes of uterine displacement. I particularly refer to retroversion. I do not see how any knowledge of this kind can help us in the least in the matter of treatment; for we are not called upon to prevent displacement, but to remedy it, except in the case of a patient who has been the subject of displacement previous to a pregnancy which has been brought about perhaps, or at least aided, by the application of a pessary—of which I have seen many examples. The surgeon is not aided in his treatment of a broken leg by a knowledge of the way in which the fracture has been sustained. The only opportunity for practising preventive treatment arises when the subject of a retroversion has become pregnant while wearing a pessary, or was known to have a retroversion at an early stage of pregnancy. In such a case the patient should not be allowed to lie on the back during the puerperium and the earliest opportunity should be taken to ascertain the position of the uterus. Such a case has come under my notice while writing this paper. Some few years ago I found the patient to be the subject of a very bad laceration of the perineum, a large rectocele, a smaller cystocele, and a
well-marked retroversion. I restored the perineum with a
view to a subsequent pregnancy, and applied an Albert Smith-
Hodge's pessary, which gave immediate relief to very distressing
symptoms. In January last, after the lapse of about seven
years, and believing herself pregnant, she again consulted me,
earnestly desiring that I should produce abortion, because she
was afraid she might have a repetition of her former trouble.
I comforted her on this point, instructed her not to lie on
her back after delivery, and wrote to her medical attendant.
My instructions were rigidly carried out, and when she came
to me at the end of three weeks I found the uterus in
perfect position. My intention was to apply a pessary if the
uterus showed any sign of becoming retroverted, for if taken at
this early period a cure can be confidently anticipated.

That a retroversion is sometimes caused by a fall on the
buttocks, or even "on the face," is unquestionable—of both
of these I have seen several examples—but I do not see how
this knowledge affects the treatment. We may tell women
that they must avoid falling in either of these ways, lifting
heavy weights, or straining at stool. But probably in 999
cases out of 1000 this advice would be useless. Hence dis-
quisitions on etiology appear to me to be labour lost.

A knowledge of the frequency of displacement or malforma-
tion in the female population is obviously unattainable. But
we can form an approximate idea of their comparative fre-
cquency. According to my experience, the three states of
retroversion, anteflexion, and retroflexion stand in the order
of frequency as I have named them. Retroversion with ante-
flexion is so very rare that it may be regarded as a curiosity,
and scarcely deserving of being erected into a separate class.
I have seen but very few cases in an experience of 40 years.
Two of these are recorded in my little book on the *Use and
Abuse of Pessaries*, and, as far as I know, they were the first
observed.
BY DR GEO. GRANVILLE BANTOCK.

Now, given a case of uncomplicated retroversion, in which the uterus is perfectly mobile and capable of being raised into its normal position, either bi-manually or by means of the sound, I unhesitatingly assert that the only legitimate treatment is that by a properly adapted pessary. I protest against the statement of a well-known operator that "the only place for the pessary is the back of the fire." Such a statement can only be the outcome of profound ignorance of the subject.

The mania for surgical interference which characterises the present-day gynaecology, the ignorance prevailing with regard to the principles of the treatment by the pessary, and the want of skill in its application, have blinded men to the justice of this simple proposition which I have laid down; and we read of hundreds of cases of operation by individual operators, such as shortening the round ligaments from without or from within the peritoneal cavity, ventro-fixation and vagino-fixation in all their varieties. If I could have brought my conscience to the point of persuading my patients to submit to any one of these operations, I also should have been able to reckon them by hundreds. But I have never done so. On the contrary, there is no branch of my work that gives me more satisfaction than the use of the pessary in cases of uncomplicated retroversion of the uterus, and for these reasons, viz.: the absolute absence of danger, the relief which it gives in all cases when properly applied, and the prospect of cure in a large majority of the cases. It is no valid argument against its use that the pessary has to be worn for many years. The same objection may be urged against the wearing of a set of artificial teeth, and with much more justice.

The time required to effect a cure will be in proportion

1 Alexander's operation never appealed to me because of the fact that when the uterus is pulled down, the last structures put on the stretch are the round ligaments, while ventro-fixation placed the uterus in an unnatural position, and vagino-fixation appeared to me an outrage on common sense.
to the duration of the displacement. Striking examples establishing this proposition are afforded by the cases of recent occurrence to which I have already referred, viz.:— from falls, and in which relief was immediately obtained. and a cure effected within a year, as well as in the following case very briefly related:—

A former patient of mine (1890) was cured of uterine congestion, and a year after the cessation of treatment bore her first child, after having been sterile for four years. After several years of widowhood she married again, and being desirous of having at least one child more—for her husband’s sake—again sought my aid in January 1896. The uterus was in perfect position and free from congestion, but the cervix was hard and the canal contracted. Under a course of treatment by graduated bougies the canal became patulous, and in due time she became pregnant. She had a very good confinement, but immediately on getting up began to suffer great discomfort and even pain in the pelvic region. An appeal to her medical attendant was without avail, and as soon as she could travel, she came to town. Examination revealed a well-marked retroversion. The application of a pessary gave her immediate relief, and in a year I removed it. Six months afterwards the uterus was in perfect position.

The majority of my patients come after many years of suffering, some—I may say most—of them having worn pessaries (up to as many as seven) of various kinds and size, others only subjected to medicinal treatment. I have a large number of pessaries duly labelled, as examples of completely successful treatment—otherwise cure; but I have—or have had till recently—a very much larger number illustrating unsuccessful treatment, removed from patients to whom I have been able to afford relief.

These examples illustrate the ignorance prevailing with regard to the principles of treatment. To say that a man who
puts a pessary into a woman's vagina merely because she has symptoms referable to the pelvic region is ignorant of first principles, is a self-evident proposition. And yet how many of these cases have I seen!

Given a genuine case of retroversion, it is necessary to understand the principles of treatment.

In all cases of retroversion there is a certain amount of descent of the uterus. In a well-marked case the cervix will be found close up behind the pubes, in the axes of the vagina, with the os pointing to the outlet, so that the examining finger passes straight into it (if dilated). In extreme cases the os points upwards as the patient lies on the back. The vagina is shortened in proportion to the amount of descent. The first principle, then, is to restore the uterus to its normal position, and, despite all that has been said against the use of the sound, I maintain that it is the best means for this purpose. In a few cases, when the abdominal walls are very thin and lax, it may be possible to effect the restoration by the bi-manual method; but even in these the proceeding gives much more pain than the sound. By means of this instrument the uterus can be raised till the fundus touches the anterior abdominal walls without the possibility of injury, provided the cervix be supported by the finger guiding the sound. For this purpose the sound should be well bent, not curved near the point, as is usual, but as in the illustration.

In all cases it is essential that the bladder should be
empty. Then the sound is withdrawn, and, while the cervix
is pressed backwards and the fundus forwards, the intestines
are pushed well down behind the uterus, and the organ is
left in a state of exaggerated anteversion. The pessary is
now applied, and if the sound again pass in the normal
direction we have proof that the normal position is main-
tained. I may here add that this exaggerated position of
anteversion has never, in my experience, caused any
symptoms.

While it is of the first importance that the uterus be thus
placed in its proper position, it is equally necessary that the
form of the vagina should receive our attention. The restora-
tion of the uterus to its proper position restores the vagina
more or less to its normal length. Now the object of the
pessary must be to maintain these two effects. The mode of
action of the pessary has been so often described by Goodall,
Schultze, and others besides myself, that I need not dwell
upon this part of the subject. To put in a pessary without
first restoring the uterus to its proper position, in the hope
that it will effect that object—yet how often it is done!—
has been sufficiently condemned by other writers. Schultze
is very emphatic on this point, for he says, "No pessary in
existence can do this; the normal position must first be
restored."

Now it must be remembered that the vagina is a collapsed
tube—not an open tube or pipe as authors continually
represent it even at the present day—flattened antero-
posteriorly, with the two surfaces in close apposition and
closely embracing the cervix. This is admirably illustrated
by Hart and Barbour. Therefore it follows that any
instrument which separates these surfaces to that extent
distorts the vagina. Hence, also, it follows that as it is not
possible to devise an instrument that will obviate this
entirely, the best is that which distorts it the least. The
forms (and names) of the pessaries that are now, or have been, in use, are legion, and while much ingenuity is shown in their construction, very little judgment is exhibited. Careful investigation has shown that the form of the vagina may be represented by a thin section through the middle of a pear, the stem end being towards the vulva.

The instrument, then, which most nearly meets the requirements of the case is the Albert Smith modification of Hodge's pessary, than which I do not believe it possible to devise a better; and when made of material that can be readily moulded to suit the necessities of each case we have all that we can desire. The figure-of-eight pessary has these disadvantages, that if the cervix be enlarged, as it frequently is, it gets strangulated in the posterior opening, and the walls of the vagina are kept too far apart, where the limbs cross one another, favouring the accumulation of discharge. This applies to all the others in varying degree. I think I am justified in calling the "ring" pessary the "abomination of abominations." Yet I am told that it is sold by the gross where all other varieties are sold by tens. From its tendency to resume its circular form, the effect of this instrument is to shorten the vagina, and thereby continue the descent of the uterus, and to keep the naturally opposing surfaces widely asunder, etc. Hence we need not be surprised that the men who use this instrument never meet with a case of cure, and therefore form a low estimate of the value of the pessary. It is impossible for a ring pessary to cure a simple case of retroversion. Until recently, I had a very large collection of these pessaries, ranging in size from the smallest to 4½ inches in diameter. Their removal was always attended with the escape of a more or less copious discharge, often offensive. They have been put to a more profitable use in lighting furnace fires. I am surprised to find that this form still finds favour with the writers of the two papers I have
referred to at the beginning. Under the same condemnation comes Fowler's pessary, and if it be possible to pass a heavier sentence, I select the cup and stem for it. I have quite recently come across two cases in which this instrument caused intolerable suffering. In one of these only was there any displacement, and in this case the application of a properly fitting Albert Smith-Hodge gave immediate relief, notwithstanding intense uterine congestion.

If ignorance of first principles be answerable for much of the failure to afford relief, or effect a cure, by the adaptation of a pessary, want of skill is no less so. From a combination of the two, it results that the pessary is often put in doubly reversed, with the infliction of much unnecessary pain. This had so frequently occurred in the case of patients coming from the country, that, some years ago, I had to resolve that unless the patient could give me the opportunity of ascertaining the cause of any failure to give relief, I would not undertake the case. Quite recently the breaking of this resolution was attended with distressing circumstances. The patient was a young woman, the mother of one child. She had not been well since the birth of that child, six years ago, suffering from more or less constant pain in the pelvic region, from menorrhagia (for which she had been twice curetted), from dysmenorrhea, headache, sleeplessness, thoughts of suicide, and gastro-intestinal troubles, including Obstinate constipation. The application of a cup and stem caused her intolerable suffering, and she was at last told that she must make up her mind to be an invalid for the rest of her life. It was under these circumstances that she consulted me. Examination revealed the existence of retroversion, with general enlargement—probably sub-involution—intense livid congestion of the enlarged involution of the enlarged cervix, and erosion of the circle of the os. After a course of treatment, including the use of a pessary, she had improved so much in every respect, and the
utérus was in such excellent position, that on one occasion I sent her home without the pessary—as a test. Three days afterwards she began to have her old symptoms, and at her request, though with some misgiving, I sent her the pessary. A great deal of pain was inflicted upon her in the effort to introduce the pessary by means of a speculum and otherwise. After its introduction, not only was there no relief, but an actual aggravation of the symptoms. In a state of despair she telephoned to me her condition, and I had to ask her to come up at once—a distance of nearly 200 miles. I found the pessary doubly reversed. Its re-application, without any pain, at once relieved her, and now, unconscious even of its presence, she looks to the future with confidence.

The authors of the papers referred to are, as I have said, still in favour of the “ring” pessary. The former actually gives an illustration of an impossible state of things with the ring in situ, and the latter specifically says, that “in uncomplicated cases of cystocele and rectocele a rubber ring pessary usually answers best, whether there be cystocele alone, a rectocele alone, or a combination of the two.” I may at once say that a pessary applicable to the treatment of a rectocele has not yet been devised, nor is likely to be, and the only effectual treatment is the restoration of the perineum. It is quite different, however, in the case of cystocele. For this condition we have a perfect support in the diaphragm pessary, which was introduced to the notice of the profession many years ago in my little book, but which appears to have been overlooked. Here is a specimen or illustration.

With this instrument I have obtained excellent results in cases of cystocele and elongated cervix. In one case of the latter, in which the cervix had passed through the vulva, a lasting cure was effected. The only difficulty attending its use is that it cannot be kept in stock, and a model has
first to be made out of a Britannia metal pessary with elastic bands across. From this model one is made of vulcanite.

There is a general agreement as to the precautions that should be observed in the use of pessaries. That they are not in every case attended to, ought not to be charged against their use, but against their abuse. If these precautions were observed we should not hear of "injuries due to neglected pessaries."

As far as present appearances show, it seems hopeless to expect that the age of anteversion pessaries will soon be at an end, or of vaginal pessaries for retroflexion and anteflexion. Yet a moment's consideration of the anatomy of the parts ought to convince any unprejudiced mind that it is impossible to influence for good either of these conditions. Thus anteversion beyond the normal will be due to something behind the uterus, pushing it forward, and in such a case the anteversion claims no attention. Anteflexion is in no way influenced by the frequent distension of the bladder, and it is an utter impossibility to exert any pressure on the fundus, owing to the intervention of that viscus. As I have already said, anteflexion is not a displacement but a malformation, and must be treated from within. For this purpose the intra-uterine stem—preferably Meadow's combined stem—is often of great service. But seeing that ante-
flexion *per se* is not necessarily a direct cause of symptoms, nor until it becomes associated with some degree of obstruction to the escape of the menstrual flow through narrowing of the canal, this instrument now seldom finds a place in my armamentarium. This narrowing of the canal may be only temporary, that is to say, during the physiological congestion which characterises the menstrual period, or may be permanent through hyperplasia of the uterine tissue, in which case the internal os will be found to be extremely rigid, so much so, as to resist the distensile action of a large laminaria tent for 48 hours. Such a tent I have illustrated in my book—and I have seen many cases when dilating for the purpose of curetting. In these cases the process of dilatation is often accompanied by retching or even vomiting, as it is in the use of graduated bougies. These cases are not suitable for the stem pessary, but for gradual dilatation. Did time permit, I could give some striking examples of this effect, and I may now state that I have long given up any cutting operation in their treatment.

When it is said that “at their worst pessaries are capable of producing serious injuries, and at their best they have inherent drawbacks,” I would ask, “Of what method of treatment cannot the equivalent be said, and with far more justice?” The writer of these words has drawn up the following indictment against them, viz., “That there is a tendency to set up irritation, resulting in constant leucorrhoea (which I deny), and entailing the necessity for regular douching; there is the necessity for examination at more or less frequent intervals (to which I give a qualified denial), which most women naturally find objectionable (yes, when, as I know, some men are in the habit of removing the pessary for every menstrual period); there is the uncertainty of results; and, lastly, in favourable cases there is the prospect of a woman having to wear a pessary for ten,
fifteen, or twenty years." Apart from the fact that this indictment shows a lamentable want of appreciation—to put it in the mildest way—of the proper use of the pessary, how does this indictment compare with that which can be brought against his "more excellent way," viz., either of the various operations which have been devised, and are now so frequently resorted to for the relief of uncomplicated retroversion? I refer you to the recent report of Professor Oui, read before the recent Congress of Gynaecologists at Rouen, on the influence of these operations on pregnancy alone.

Now, I am not aware that there is on record a single case in which a woman has lost her life through the use, or even the abuse, of a vaginal pessary. On the other hand, what a tale of disaster could be written with regard to the operations I have referred to! Failures in every respect have attended them; immediate failure by the death of the patient; failure to effect a cure, or relieve the symptoms; abortion as the result of the imprisonment of the uterus; rupture of the uterus from the same cause; the necessity for Caesarean section in the cases of women who have previously had normal confinements, and in a considerable number of cases, return of the displacement after a succeeding pregnancy, and finally the need of a second operation to remove the effects of the first. Do not suppose that I am drawing upon my imagination for all this. It is all too true. I say that an operation which is certainly not one of necessity, which cannot even be said to be one of expediency, which involves so much risk of life and actual disaster, and which places the uterus in an unnatural position, is not a justifiable one. At least, that is the opinion I have long held, and now with increased tenacity in view of extended results; for my estimate of the sanctity of life has prevented me from adopting the practice, even in a single case, seeing that I have been able, in a vast majority of cases, to afford relief by a perfectly
harmless procedure. Some of these operations have already been rejected, notably Mackenrodt's operation of vagino-fixation—an example of "the remedy being worse than the disease"—and each individual operator declaims against the method of the other.

When a retroversion is complicated by adhesions, inflammatory states of the appendages, or tumour in the uterine wall, it is not the version that calls for treatment but the complicating condition. Yet I have seen a considerable number of complicated cases in which I have met with unexpected and most gratifying success from the use of the pessary. Did time permit, I could give the details of a case of retroversion, complicated by a fibroid tumour of small dimensions, just short of being imprisoned in the pelvis, in which a pessary retained the uterus in position until the disappearance of the tumour coincident with the menopause left the uterus in its normal place. This patient wore the same pessary (Britannia metal) throughout. Had this patient any reason to complain of having had to wear a pessary for more than ten years? I trow not.

The pessary is an important aid in the treatment of subinvolution, so often associated with, if not due to the retroversion.

In the case of retroflexion properly so called, or as I have defined it, no vaginal pessary can be of any service in undoing the flexion, for the reason that it is impossible to afford direct support to the fundus by its means. In these cases, which, by the way, are very rare, the instrument I use is Meadow's compound stem, and it is remarkable that menorrhagia, which so frequently accompanies this condition, is not only not aggravated, but actually benefited by it. That many cases of retroversion of long standing have some amount of flexion superadded is unquestionable, from long continued intra-abdominal pressure on the anterior surface.
But these are essentially retroversions. This posterior flexion appears to me to constitute a strong argument against the current doctrine that anteflexion is the normal form of the uterus. In a case of true retroflexion a vaginal pessary simply aggravates the flexion by doubling the uterus still further upon itself.

Now arises the question, Of what material should the pessary be made? The rubber or celluloid-covered wire, the vulcanite, and Britannia metal, all find their advocates. The pessaries I have had to remove most frequently and accompanied by the most offensive discharge, have been the first named. The idea of putting a cushion on the posterior crossbar, filled with air or glycerine, to support the fundus, not only shows an ignorance of the action of the pessary, but is a physical mistake; for, in a short time, the cushion collapses, and presents a horribly corrugated surface, with what result I need not describe. I am informed that these cushions are now filled with gelatine, but that does not alter the principle.

The vulcanite is open to only one objection, viz., that it is very difficult to alter the shape, and, as Marion Sims said, “the man who is not a mechanic should not trust himself to use a pessary.”

I have tried the celluloid, which finds so much favour with Schultz and his followers, but others, as well as myself, have found that it does not retain its shape unless nearly straight.

The most suitable and convenient material, according to my experience, now extending over a period of about five-and-thirty years, is the Britannia or white metal. The shape is most readily altered and is retained, and the metal itself offers this advantage, that it gives notice of the pressure of any irritating muco-purulent discharge, by becoming more or less black. It is also very easily cleaned and polished, and can be worn for years.
Were it not for the difficulty of moulding it, the best material of all would be aluminium, on account of its extreme lightness and non-liability to corrosion by any discharge. But this difficulty and the cost militate against its more general use.

I have now shown that the pessary, when properly used and not abused, involves no danger whatever, but is worthy of our full confidence; that the charges that have been brought against it cannot justly be sustained; that in its results it compares most favourably with the operations which have been substituted for it; and that it is an entire misrepresentation of the case, to say that "the operative measures" to which I have referred "do all and more than all that pessaries can do, without their manifold drawbacks and risks."

If I had done nothing more than afford the relief which the pessary has enabled me to give, I should now feel that my professional life had not been ill spent, and if I have failed in some cases, I have at least the satisfaction of having done no harm.

I may have used some strong expressions in the course of this communication. If I have done so, it has been from a sense of duty towards suffering woman. They have come from my heart, under the guidance of my understanding, and if I had a hundred tongues I should use them for the purpose of trying, at the least, to put a curb upon the frequency with which the operations to which I have referred are performed.

Professor Simpson thought they should first express their gratitude to Dr Bantock for coming to them that night and giving such an excellent paper. Of course, one was prepared to expect the position which Dr Bantock took up to-night, and he (Professor Simpson) would say at once that he
sympathised very strongly with him in the general trend of his paper. He had long had reason to believe in the value of the pessary in dealing with uncomplicated displacements of the uterus, and they had to observe that Dr Bantock laid stress on the condition of absence of complications. One had to say that the uncomplicated posterior displacement was not so very frequent. A great many cases were found in which there was already something else to deal with besides. If we got a case of simple displacement, the best thing was first to replace the uterus and then to put in an Albert Smith pessary. As regards material, he would say that he had found vulcanite most serviceable. As regards the fitting of the patient with it, one has—as Dr Bantock has in Britannia metal—a series of pessaries that may be used, and then in cases where one has not a pessary which exactly fits, he thought the best temporary material was gutta-percha. This could be made, when softened in boiling water in the consulting room, and moulded to the form of a ring or any other desired shape, and when the required shape and size of any special case had been obtained we could send it to the instrument makers, and get the more permanent instrument made of vulcanite. He used the Marion Sims’ soft-metal pessaries years ago, but found them rather difficult to manipulate. He (Professor Simpson) thought Dr Bantock went too far in saying there was no danger whatever in the use of the pessary. He admits that it has to be applied with skill, and only in suitable cases; but that will hold good with every line of treatment. Given a proper case, and the pessary applied by a skilful hand, and it is good. But that also applied to the operation which takes the place of the pessary, and it seemed to him (Professor Simpson) that there was quite sufficient ground in many cases to justify an operation when dealing with displacements of the uterus. Hodge, in his book on the lever pessary,
described cases which had been cured of the attendant congestion from the simple use of the pessary, where the uterus is right, and kept in position; and he himself had met with such cases. But pessaries did not always relieve the symptoms, and in many cases one had to fall back on other treatment. Some patients were intolerant of the pessary. This was coming again under the range of uncomplicated cases, but it seemed to him that there were cases where one had to select between pessary treatment and operative treatment, and he thought it was a distinct gain to gynaecological surgery to find that sometimes, by shortening the round ligament in the inguinal ring, or by the intra-peritoneal operation, they could effect a cure of troublesome retroversion. He had no doubt that there were some cases where women did not bear the pessary well, because of ovarian sensitiveness, and then he thought the operation should be performed and there need not be much danger, even to the patient's reproductive life. Surgical interference was sometimes attended with disastrous consequences in subsequent pregnancies and labours, but it was not necessarily so. There was no likelihood of such dangers arising in cases where the ligaments had been shortened within the abdomen. There was room, therefore, for discussion on both sides. They must not on the one hand denounce operative procedures for the relief of uterine displacements, nor on the other hand could they declare that the pessary was a useless thing. The pessary may be dangerous, and we must keep in mind that there are drawbacks to its use. The patient herself was not always so intelligent as to know the necessity of having it seen to from time to time, and she might not come for years. There was a time when the pessary became dangerous to the woman who might have worn it for years without discomfort, and that was when the menopause set in. There was then a distinct shrinkage of the vagina as well as other organs, and a pessary that had been long worn with comfort might then
begin to ulcerate into the bladder or the rectum, or into the pouch of Douglas. We must, therefore, keep in view the danger to a woman approaching the menopause who wears a pessary in her vagina.

Dr Berry Hart had listened with pleasure to Dr Bantock's paper, although he thought he had exaggerated greatly the value of the pessary and the permanence of the cure. It was undoubtedly of service in some cases of retroflexions where there was rigidity of the vaginal roof, but not where there was laxity. As to operative treatment, probably the Alexander-Adams operation promised best, and good results were obtained by some of the vagino-fixation operations. He himself did not take any exaggerated opinion of the results of uncomplicated retroflexions, and it was rare to find cases with symptoms not associated with inflammatory conditions. Bad cases, therefore, very often resolved themselves into abdominal section for the removal of the diseased appendages. They were all greatly indebted to Dr Bantock for the trouble he had taken in coming to state his views before them.

Professor Kynoch.—It seemed to him that in the use of pessaries there were two things essential—first, a correct diagnosis of the condition; second, an intelligent idea as to the mechanism of the pessary. With regard to forward positions of the uterus, he had no experience of treating such cases by instruments; because in cases of very marked anteflexion which he had seen, the condition had been treated by dilatation, curetting, and the introduction of gauze. In regard to backward displacements, the pessary was doubtless useful. They must all have seen cases where patients having had one or two full-time confinements had then a series of abortions, the real cause of which was the backward displacements. Regarding the curability of backward displacement by pessaries, he did not doubt as to their effecting a cure, if the case was seen within a short time after the
confinement. With regard to the treatment of retroflexion, although many symptoms, e.g., menorrhagia, might be cured by the introduction of a pessary, in very marked cases the accompanying inflammatory symptoms were best treated by other means, e.g., douching and curetting, but the good effects thereby produced were continued by the introduction of a properly fitting pessary. Treatment by operation should be limited to cases beyond the child-bearing period, and where the patient could rest for a long period after operation, as the permanent good effects were greatly influenced by the patient resting for a prolonged time. Cases of fixed retroversion, even in young patients (the fixation of the uterus being very frequently associated with inflammation of the appendages), were perhaps best treated by operation. With regard to the material of the pessary, vulcanite was the best; gutta-percha the worst. There was one form of pessary which was mentioned in textbooks and almost always condemned, and that was the Zwanké's pessary. With private patients he had found it quite satisfactory, but in hospital patients who could not be kept under observation, it was objectionable.

Dr Barbour said he had some hesitation in speaking, because to take part in such a discussion meant only to repeat what had already been said, and said better, by Dr Bantock and others. The object of the discussion, however, was to have some expression of each individual mind, and thus to get a general consensus of opinion. The question at issue was Pessary v. Operation. As to the normal position of the uterus, he thought that in the body it was anteflexed. Bandl, in the paper quoted, had shown that while the uterus out of the body was straight, in the body it was kept flexed by the action of the utero-sacral ligaments and intra-abdominal pressure. In maintaining the natural position a pessary acted as a splint. It did not always keep the uterus in position; and in many cases the
uteros fell back into its old place when the pessary was removed. One reason why the pessary did not always work was, that it acted only upon the cervix, it did not control the position of the fundus. Another drawback was, that the patient required to come at stated intervals to see that the instrument was in position. In contrasting pessaries with operation we might take as an analogy the case of hernia, in which a patient might be treated by truss, or by radical operation. Only, one must bear in mind that hernia may at any moment become dangerous to life, whereas in the case of a displacement it was more a question of the patient's comfort. As regards treatment by operation, this had become too common. And because of the fact that we can now get at the uterus with ease and safety to the patient, the tendency is for operations to be done which are not called for. An operator should bear in mind that the fact that an operation can be done with impunity is not a reason for doing it. Another point was that the result of operation was often to produce what was really a pathological condition, such as cicatricial adhesions. A peritonitic adhesion was as much a peritonitic adhesion whether it arose naturally to pull the uterus back, or was produced artificially to keep it forward. The form of operation which he was most in favour of was where natural structures were used, e.g., shortening of the round ligament, or stitching the broad ligament to the abdominal wall in cases where the appendages had been removed. After thus stating the objections, on the one hand to pessaries, and on the other to operative interference, he would sum up by saying that he differed from Dr Bantock in holding that operative measures had their place. Pessaries should be tried first, and operative treatment in cases either where pessary treatment had failed, or where the pessary was contra-indicated for some other reason.

*Dr J. W. Ballantyne* said that some five years ago he had been
reading a number of articles against pessaries and their use, chiefly in American journals, and had been stimulated to write an article upon that subject for this Society, which to a very large extent went on the same lines as the present discussion. He had then tried to take the middle path with regard to the idea of the superiority of the pessary over operation. He could not, of course, speak with the same power and weight as Dr Bantock, not having had the same wide experience. But he pointed out, as far as he remembered, that he could look back on some cases of distinct cure by the use of the pessary, and he could also look back on some cases which he had operated on and cured, which the pessary could not have cured. He came to the conclusion in that article that it was retroversion that was, as it were, the watershed of our professional opinion on this whole subject. On the one side the operator, and on the other side the believer in the pessary. They were agreed on prolapsus, anteflexion, etc., but on retroversion opinions were divided; and he thought that had been again brought out by to-night's discussion. An interesting point brought up by Professor Kynoch, was that of position after replacement of the uterus. The dorsal posture was not the best for several days after the operation, or after the insertion of a pessary. There was one other point which did not come into the discussion, which he must refer to, and that was the danger of not making a very careful examination every time the patient came back to have her pessary changed. One should never take out and replace the pessary without carefully exploring the pelvis and abdomen. He had had a case where a tumour had developed in the abdomen while the patient was coming to him for pessary-treatment. This must be kept in mind. The pessary might be doing its work for years, and there might be no symptoms, and yet they must examine carefully as to the condition of
other things. The same rule applied to the making of a bi-
manual examination: we should not be satisfied by finding
one pathological condition. In conclusion, he had to thank
Dr Bantock for his paper, to which he was sure they had all
listened with such interest. Instead of saying, with some,
that pessaries were "necessary evils," he would say that
pessaries were necessary, and that they were not necessarily
evil.

Dr James Ritchie expressed the pleasure which Dr Bantock's
paper had afforded him. When the Senior Secretary had asked
him to give his experience from the point of view of a general
practitioner, and he began to consider the subject, pessaries
seemed to become divided into two classes, viz., intra-uterine
and vaginal. Of the former he had a considerable collection
in a drawer, but he had not used one for about fifteen years;
he, however, felt interested by the favourable notice accorded
to them by Dr Bantock and Professor Cameron, because he
had been indebted to them for the cure of some cases of
sterility due to retroflexion. In considering the treat-
ment of individual cases of displacement, he believed that
if there were no symptoms, no treatment—at least no-
mechanical treatment—was required. He had never had
to use a pessary for anterior displacement. Retroflexions
and various degrees of prolapse were the displacements which
in his experience required the use of pessaries. They should
only be used in uncomplicated cases, but there was one
exception, viz., in cases of retroflexion with enlargement of
the uterus; in these it was not necessary to wait until by
other measures the uterus was reduced in size, the use of a
pessary tended to diminish the congestion. Dr Barbour had
stated that it was impossible to control the position of the
fundus uteri. The speaker did not agree with this statement,
because on examining a patient, who had displacement, in the
standing posture before and after the introduction of a
pessary, it was easy to satisfy oneself of the marked difference in position; furthermore, the pressure symptoms, such as haemorrhoids, were relieved after the use of a suitable pessary. The form of pessary which the speaker most frequently used was some modification of an Albert Smith, in accordance with the requirements of the case. Sometimes in prolapse with cystocele a pessary more of the shape of the Hodge, with transverse bars at the lower portion, was serviceable. In elderly women with marked prolapse he sometimes found it impossible to get a vulcanite or celluloid pessary retained; in these cases he used a rubber ring.

Dr Haig Ferguson was sure they all agreed with the main points of Dr Bantock's paper, but there were one or two points which perhaps might be differed from. He thought, if anything, he had not said enough about the dangers of the pessary. If the case was a simple one, and the pessary wisely applied, it was extremely useful; but if not, harm was done. One must bear in mind what the field of the pessary was. First of all, it must be seen to that the organs to be supported were replaceable; secondly, that the pessary was able to hold them up; and, thirdly, that the pessary caused no pain. As a general rule, when the pessary caused no pain, it did no harm. One had to be careful, too, as to the position of the uterus. If the uterus is pushed too high up, there is as much trouble after the introduction of the pessary as in cases of prolapse, where the uterus is too low down. In both cases there was stretching of the broad ligament, and interference mainly with the venous circulation. In the paper which Dr Bantock had quoted, the author says that when the pessary causes pain, the patient may remove it and re-apply it herself. Now it seemed to Dr Ferguson that it was a most dangerous thing that under any circumstances the patient should ever replace it herself. If that was done, much more harm than good would accrue.
But there were further dangers. It must be borne in mind clearly that the pessary was not merely a palliative remedy, but a curative one. He ventured to quote the following from a recent author: "Pessaries might be applied in middle life in order to ascertain whether the symptoms complained of were due to displacement of the uterus or not. If found to be so, the case was one for operation." In considering this statement, it is to be noticed that the writer distinctly states that he puts the pessary in merely for diagnosis with a view to operation. Dr Ferguson could not agree to this view of matters. If a woman had displacement which was giving her symptoms, and if her symptoms were relieved by the recumbent posture, then clearly it was a case for the use of a pessary, which, if properly adjusted, would cure the condition in many cases. Nowadays the tendency was to have too little patience with patients, and for the patients sometimes to have too little patience with the doctor's methods, and between the two there was, he thought, a tendency to embark at once on operative methods which sometimes, though not always, showed brilliant results. One should only operate in cases where the pessary treatment had manifestly failed, or where the patient distinctly preferred operative treatment, or for the purpose of enabling the patient ultimately to wear a pessary by restoring the integrity of the pelvic floor. It was his opinion that uncomplicated cases of retroversion of the uterus caused no symptoms at all, and did not call for treatment; and if a woman with a retroverted uterus complained of symptoms, they were due to some complication, such as fixation with or without inflammation, prolapse, or incarceration, and therefore, when one spoke of treating a simple uncomplicated case of retroversion of the uterus, he thought, in most cases, no treatment at all was required. One other point—old women with prolapsus and atrophied uteri were sometimes unwilling to submit to
an operation, and they were often unable to wear any ordinary pessary. In that case it meant their lives were one long condition of invalidism. He knew of one instance, that of a lady who, for eight years, had been quite an invalid, having had to be wheeled about in a bath chair. After everything else short of operation had been tried, she submitted to the introduction of a Napier pessary. This, he thought, was the most reliable in such cases, and was a modification of the Cutter pessary by Napier. Since wearing this, she had got quite better, could walk several miles daily, and had given away her bath chair. Dr Ferguson thought anteversion pessaries were useless, and only did good by relieving some complicating prolapse. He had listened to Dr Bantock with great pleasure, and he thought his protest against the excessive recourse to operation was an exceedingly well-timed one.

Dr E. S. Carmichael said that, as a very junior member of the Society, he had some diffidence and considerable hesitation in rising to speak, but that he should like to state his impressions received from the teaching and practice of Professor Martin of Greifswald. During a period of seven months spent as a junior assistant in Martin's Frauen-klinik, he had never heard him prescribe a pessary to a patient in the wards suffering from a uterine displacement. In his lectures he only very cursorily referred to pessaries at all, and warned his students against their use in any but very exceptional cases. The general consensus of opinion of those who had spoken during the discussion seemed to be that pessaries should only be used in cases of uncomplicated retroversion or retroflexion, but it seemed to him that it was not always easy to determine when a retroversion was uncomplicated. This was brought forcibly before his mind by the fact that under anaesthesia immediately before operation, it was frequently possible to bring forward and replace an apparently
mobile uterus by bi-manual palpation, which, after opening
the pouch of Douglas, was seen to be covered by considerable
seño-fibrous adhesions. These were capable of considerable
stretching, but were at the same time indicative of local
peritonitis, in itself a contra-indication, both to the use of an
anæsthetic for simple replacement and the use of the pessary.
From a clinical lecture delivered by Professor Martin in the
Greifswald University he gave some extracts, showing Martin’s
views on the subject. “Uncomplicated retroversio-flexio uteri,
as compared with a complicated form, is a much rarer
condition, and when we consider that only a small number
of these cause any disturbance or trouble to the woman, the
number of simple cases of these requiring treatment is very
small. In cases of retroversio-flexio without symptoms, I
[Professor Martin] consider that we are not justified in
advising any local treatment. I warn you, gentlemen, against
the use of pessaries in all conditions with complications. I
consider that the application of the pessary in treatment is
a very limited one. Only those cases of uncomplicated
retroflexion are suitable for pessary treatment, and even in
them the percentage of permanent cure is a very small one.
After mild means, such as vaginal douching, sitz baths, hot-
air treatment, etc., have failed, operative treatment should be
advised. By this means we are enabled to verify our diagnosis,
and to treat the complications as well as the retroflexion, and
keep it in its normal position of anteflexion.” A great deal
had been said to-night condemning operative treatment for
uterine displacement, and he thought extremely unfairly.
Much had been said, but no facts had been given to support
such condemnation. He referred briefly to a paper which
appeared in 1900, in which one of Professor Martin’s assistants
gave the results of 1000 vagino-fixations performed by Martin,
and the bearing of the operation on subsequent child-birth.
In 30 cases the woman had returned to the clinique, pregnant.
In 25 of these the parturition had been normal. In 4 cases, forceps or turning was required, and in the remaining case Cæsarean section, owing to marked displacement of the cervix uteri backwards. In all the cases recorded, Martin had fixed the uterus to the anterior vaginal wall from 2-3 cm. below its fundus. Since these cases were recorded, his point of fixation was 4 cm. below the fundus uteri, where the peritoneum was reflected from the bladder to junction of cervix and body. The mortality of the operation in his earlier method of procedure had been 1·5 per cent., which entirely refuted the statement of Dr Bantock as to the danger of operative treatment. This mortality was the same as that for the medical cure of inguinal hernia in most large hospitals. He would like to have said much more, had time permitted, but he desired to thank Dr Bantock for his paper, and had listened with interest to the discussions which had followed.

Dr Hunter concurred with previous speakers in thinking that a case of uncomplicated retroversion was best treated by a properly adjusted and well-fitting pessary, but the point he wished to lay stress upon was, how is one to know after it is introduced that it is really efficient? If it be two small, the probability is that it will be found in the water-closet the first time the bowels are moved, and if too large, there will be discomfort in micturition and otherwise. After much experience of the following method, he had found it so satisfactory that he could rely on the pessary introduced at the time of his visit retaining the uterus in its normal position. Replace the uterus with the sound, and while in its corrected position, slip the pessary over the sound up behind the fundus, and make sure when one tries to turn the sound back, that the uterus can not return to its original faulty position. This it cannot do, if the pessary be of the size and form suited to the case. In
replacing the uterus Dr Hunter had always used the sound, and had never seen any harm result, though the tendency of the present day was rather to decry its employment for this purpose. With regard to the best material to be used, he had found that the block tin pessaries formerly recommended by Dr Bantock were inclined to flatten and collapse when being altered in shape, and now he took various sizes of both metal and vulcanite to a case. An objection to the former material was the tendency to galvanic action being set up between the metal and the salts in the fluids of the tissues with which they were in contact. This was liable to cause more incrustation on the pessaries, and need for greater frequency of removal for cleansing purposes. He agreed with Dr Bantock in recommending the Albert Smith form as being that most generally useful. In conclusion, he wished to say that any success he may have had in the use of pessaries had been greatly due to the instruction received from Dr Bantock many years ago, and he was glad to have the opportunity of saying so at this meeting, and thanking him for his able and interesting address.

The President congratulated the Society on the excellent discussion which had followed the reading of Dr Bantock's paper. For the delightful and instructive evening which they had spent, he felt that they were chiefly indebted to Dr Bantock, and in the name of the Society he tendered him its warmest thanks. The evening was so far spent, and the discussion had been so exhaustive, that he (the President) would not take up the time of the meeting further than to state his views briefly on the pessary. He agreed with Dr Bantock that there is no danger in the pessary when it is properly used. The first point is to make sure, before its introduction, that the uterus is properly replaced—under anaesthesia if necessary; the second point is to make certain that the instrument fits—that it is neither too big nor too
little. He also agreed with the essayist that an uncomplicated case of retroversion could be treated with the pessary, i.e., the uterus could be kept in proper position and the patient relieved of her symptoms. As long as the patient wears the pessary she has no discomfort, but, nevertheless, as long as she wears it she cannot be said to be cured. This only can be claimed after the pessary is removed, and the patient then continues free of symptoms. How long a pessary must be worn until this is accomplished, is a difficult question to answer. The nearest approach to truth is found in the statement that she must wear it indefinitely, unless pregnancy supervenes. It is this indefiniteness which makes treatment with the pessary compare unfavourably with operative measures. In the one case, you cannot tell how long the patient must remain under treatment; in the other, you can lead her to expect that she will be well in a month, and probably require no further treatment. Give the patient her choice, and in most instances she will prefer the latter plan. Operative measures, such as shortening the round ligaments, are specially indicated in the unmarried. In such cases he thought that treatment with pessaries was very objectionable. The President's experience of the operation of extra-peritoneal shortening of the round ligaments extended to over 100 cases, and recurrence had not taken place in more than 5 per cent. In the better classes, in those who are exempt from physical labour, the results are perfect. He was not in favour of any intra-peritoneal method for suspending or fixing an uncomplicated retroversion. With regard to prolapse, he approved of operative measures in all its stages. It was only in the case of patients who were too feeble to be operated on that he used pessaries, and then he found the disc and Simpson's shelf pessary the most useful.
MEETING III.—JANUARY 11, 1905.

Dr N. T. Brewis, President, in the Chair.

I. The President showed—(a) LARGE FIBRO-CYSTIC UTERINE TUMOUR removed by hysterectomy; (b) UTERUS removed for cancer of the body; and other specimens.

II. Professor Simpson showed—(a) TWO OVARIES from a case of pseudo-myxoma peritonei, from a burst ovarian tumour. The elderly woman from whom they had been removed had been sent to the Buchanan Ward by Dr Ballantyne, suffering from distension of the abdomen. There was indistinct fluctuation. The presence of some nodules projecting from the margin of the umbilical depression, and the feeling of other larger masses behind other parts of the abdominal wall, conjoined with the recognition partly of fluid and partly of nodular structures through the vaginal roof, gave rise to the impression that the patient was the subject of peritoneal and ovarian carcinoma. An exploratory incision through the abdominal wall showed that there was a large cystic tumour of the mucinous variety. Some of the cysts had burst and filled the peritoneal sac with gelatinous material, producing thickening of the serous investment of the abdominal parietes and the viscera. The incision having been enlarged, the large left-sided tumour was removed; and as the right ovary had become the seat of a similar degeneration, it was removed also. Whilst the glutinous deposits were generally thinly spread over the peritoneal surface, at some points on the wall they formed thickened masses, and at the umbilicus they had grown through the peritoneum, so as to produce the bulgings on the skin surface. The omentum in some of its extent had solidified deposits in it that gave it a
EXHIBITION OF SPECIMENS.

sarcomatous appearance. The abdomen was cleared of all the loose jelly-clots, the umbilicus excised, and the long wound closed by a series of through-and-through silk-worm gut sutures. The patient had made a smooth recovery, and when she left the Infirmary the walls and contents of the abdomen felt soft and regular. (b) Two fibro-myomatous uteri removed by supra-vaginal hysterectomy, both of which illustrated the relation that had been pointed out by Bulius and others as existing between disease of the ovaries and fibroid degenerations in the uterus. The one uterus was from an elderly patient, who had some peritoneal effusion, and the pelvis packed with one dense fibroid mass, to which were attached several of smaller size. The preparation shows the series of smaller sub-peritoneal tumours, some of them pediculated. Only one of the ovaries was markedly cystic, and is seen to have been removed with the uterus; the other having been of normal appearance, was left. The second preparation had been removed from a younger patient whose strength was getting undermined from profuse haemorrhages. There was one fibroid of the size of an orange and some smaller ones embedded in the wall, and the mucosa was very thick and vascular. In that case both ovaries had been removed along with the uterus, and could be seen to have undergone extensive cystic degeneration—one of them enlarged to the size of a hen's egg, the other about half that size. (c) A left-sided parovarian tumour with very marked pedicle-torsion. Twisting of the pedicle was of frequent enough occurrence in connection with ovarian tumours, especially with ovarian dermoids, but he could not remember to have met with it before in a parovarian case. When the pedicle came into view, it had the appearance of an umbilical cord, and showed two complete turns. It was easily crushed with Doyen's angiotribe, and for security a thin silk thread was applied after the tumour was cut off. (d) An anen-
OEPHALIC HYDRO-RACHITIC FŒTUS that had been sent to him by Dr Wallace, of Mardy. The mother was 41, and had had twelve children—two of them twins—and one miscarriage. She had had more or less discomfort throughout her pregnancy, was unable for her work, lost sleep on account of pain, and could not lie in bed. Six weeks before her confinement she was of enormous size, had a dropsical appearance and considerable swelling of the legs. The membranes had broken before Dr Wallace arrived, and the liquor amnii escaped in flood and was running out at the door. The fœtus was premature, and had evidently been some time dead. The case illustrated the relation that he (Professor Simpson) had many years ago in this Society demonstrated as existing between anencephaly of the fœtus and hydramnios. In this case the excessive accumulation of liquor amnii was certainly not due to renal activity, for the kidneys could be seen to be unusually small, even for a premature infant, and there was no hint in the empty bladder and uterus that they had ever been distended. That the mother was a xiii.-para, was in keeping with the observation that multiparae were more liable than primiparæ to be the subject of hydramnios.

III. Dr Haultain exhibited a specimen of a FIBROID UTERUS removed by hysterectomy, which demonstrated the difficulty of oöphorectomy. This showed the absolute impossibility of recognising the ovary, far less removing it. It appeared as if there were only one ovary, but he found below the fibroids a small blood-cyst, which on closer examination was found to be the corpus luteum, in an attenuated ovary, which appeared as a mere thickening of the broad ligament.

IV. Dr Barbour Simpson showed two specimens of EXOMPHALOS. (a) In the first case, the woman was the
subject of irregular pregnancies. \(b\) In the second case, in addition to protrusion of abdominal viscera, there was also protrusion of some of the thoracic viscera, notably the heart. The condition of spina bifida was also present, and there was in addition complete absence of the anus, and the external genitals were not recognisable, being simply represented by a rudimentary cleft. No difficulty was experienced in delivery, the foetus in each case presenting by the breech.

V. Dr Angus Macdonald showed — \(a\) TWO FIBROID TUMOURS. The first was removed from a girl of 24, with pressure symptoms. The fibroid tumour was in the posterior wall, and proved to be a cervical one. The swelling filled up practically the whole of the pelvic cavity, and she had great difficulty in defaecation, and also considerable haemorrhage. They removed the growth by the supra-vaginal method, leaving a small portion of the cervix. The other fibroid was from a patient 50 years of age. The climacteric had been passed about six or eight months previously, but she had suffered from dysmenorrhoea for many years, and after passing the climacteric had had a great deal of pelvic pain. The fibroids were multiple and principally cervical. In the first case he removed the ovaries along with the uterus, because the naked-eye appearance looked unhealthy, and there was on one what appeared to be a small papillomatous tumour. \(b\) A LARGE TUMOUR, weighing 15 lbs., removed from a woman of 64. She sought advice for bearing-down pains in the pelvis. She was first treated by her physician for prolapse, and Dr Macdonald thought it was only because her general health had been impaired, and she had become so much thinner, that the size of the abdomen attracted attention. The tumour filled up the whole of the right side of the abdomen, occupying the whole of the right side of the
pelvis and part of the left side of the pelvis. The swelling had the appearance of being of kidney origin, but there were absolutely no renal symptoms. Although keeping kidney enlargement in view, he was rather inclined to find that it was something of a broad ligament nature. When he opened up the abdomen, he was confronted with this, which had all the appearance at first of a fibro-sarcomatous growth. After cutting through what appeared to be a capsule, he found the pelvic organs free. He also found that the ureter was passing down from the swelling, and divided it early in the operation. The growth was adherent in two places to the bowel and to the lower surface of the right lobe of the liver. When he got the mass completely shelled out, there was no difficulty in securing the renal vessels. He then made a counter opening under the lowest rib, washed out the cavity, packed with gauze, and stitched the peritoneum over it. He thus got lateral drainage through the wound in the side. He discovered after removal that the enlargement was round about the right kidney—the latter lying in fact embedded in the enormous mass. Had this been recognised earlier, an attempt might have been made to shell the mass off the kidney, but as the operation had been performed this was impossible, as the ureter was cut through early. In any case, hemorrhage would likely have necessitated its removal. She made an excellent recovery in the first place, and had been much improved in general health, but there was local recurrence of swelling in the cavity. He was not quite sure whether this recurrence was of the same nature as the primary growth, or whether it was due to faulty drainage. Her temperature and the presence of cutaneous oedema suggested purulent accumulation, and he was contemplating an exploratory incision or puncture to clear matters up. The abdominal wound extended from the umbilicus down to 1½ in. above the symphysis pubis, and healed by first intention.
This was more fortunate than he had hoped for because the tumour contained several pus-cavities, one of which ruptured during the delivery. Unfortunately the first specimen sent for microscopic examination was lost, but he got another hastily ready, and it appeared to be a mixed-celled sarcoma. Dr Stewart Macdonald, who kindly made the pathological investigation, thought it might be a supra-renal swelling, but there was nothing in the sections, so far as at present examined, to show from what tissue it had originated. Most probably it was a sarcoma of the retro-peritoneal tissue surrounding the kidney.

VI. CLIMACTERIC HÆMORRHAGE DUE TO SCLEROSIS OF THE UTERINE VESSELS.


Uterine hæmorrhage in patients at or near the menopause is a subject calling for careful consideration. It is often the sign of malignant disease, and too much importance cannot be attached to this fact, because the only hope for treating such cases successfully lies in early operation—operation done at a time when bleeding is the only symptom. Once pain and foetid discharge are present, the chance of a successful operation has been lost. This fact cannot be too strongly impressed on the lay mind, so as to lead patients suffering from too free or irregular bleeding to seek advice early. Fortunately it is only in a certain proportion of these cases that cancer will be found, and the cause of hæmorrhage in others is hard to explain. I am not referring to cases associated with abortion, but to those in which this cause can be excluded.

The case which I now record throws light on a cause of
profuse bleeding which has not received sufficient attention. The clinical facts are as follows.

Mrs M., aged 46, xi.-para, has been a very healthy woman all her life till within four and a half months of admission to hospital. There is no history of Bright’s disease, rheumatism, gout, or syphilis in herself, or in other members of her family. She is not an abstainer, but has never taken alcohol regularly or in excess.

She has had nine full-time children and two miscarriages—one at six weeks, and one at three months. These miscarriages occurred after the birth of the fourth or fifth child, and her first labour occurred when she was 19, and the last when she was 43.

Before her first child was born, her menstrual periods lasted for from two to three days, and subsequently for from four to five days, the amount never being profuse. During the past year they have been more prolonged, often lasting for a week, and the amount lost, especially on the first two days, has been excessive. There were never any clots in the discharge. The periods always recurred regularly, every twenty-eight days, till nineteen weeks before admission to hospital, when a severe haemorrhage began on the day of her expected period, which, instead of ceasing at the end of the week, continued for sixteen weeks. During this time there was hemorrhage every day, but it varied in quantity at different times; some days there would be a mere show, on others severe flooding which confined her to bed, and left her weak and shaky for days afterwards. She allowed this to go on for twelve weeks without consulting her medical adviser. His first prescription had no effect, but later on he gave her medicine which apparently stopped the haemorrhage for the three weeks previous to her admission to hospital.

On admission, patient was found to be markedly anæmic and
cachectic, appearance suggesting malignant disease. Though fairly well nourished, she was weak and unable for exertion, owing to the state of the circulation. Pulse, small and feeble, varied from 84 to 90, and there was a systolic murmur over the mitral and pulmonary areas. It was ascertained subsequently that there was no thickening perceptible in the wall of the radial artery, that the temporal arteries were not thickened or tortuous, and that there was no enlargement either of the left or right side of the heart. Examination of the pelvic organs showed the os uteri to be directed downwards and backwards, and patulous, admitting the tip of the finger easily. The cervix, while enlarged, showed no signs of malignant disease; the body of the uterus was enlarged, irregular in shape, and about four inches in vertical measurement. It was of firm consistence, anteflexed, and freely movable. The examining finger was stained with blood. As the patient was not in a fit state to stand a preliminary curetting, it was decided to perform hysterectomy as soon as she was able for it. The operation was done a week after admission. Owing to the size of the uterus, the abdominal route was chosen. By the advice of Professor Simpson, who kindly assisted me at the operation, pan-hysterectomy was done. Owing to enlargement of the uterus, as well as the previous history of the case, we expected to find a malignant condition of the body of the uterus, so the cervix also was removed. The patient stood the operation well, but convalescence was delayed by an attack of phlebitis in the left leg which showed itself on the twelfth day. On the fifth day, and subsequently, there was a slight rise in temperature, occasionally touching 100°; on the twelfth day it rose to 101.5°, on the thirteenth to 102°. It was at first thought that this might be due to a suppurating stitch-hole in the abdominal incision. But on the twelfth day pain and swelling developed in the left leg, due to phlebitis. This retarded her convalescence, and it was four weeks before
she was able to get up. She went home seven weeks after the operation, feeling well.

For the following description of the parts removed I am indebted to Dr B. P. Watson, who has examined them for me in the Laboratory of the Royal College of Physicians.

The specimen consists of uterus and cervix, together with the appendages on both sides. Externally the uterus looks healthy, except that it is enlarged, measuring 9·5 cm. in length and 6 cm. in breadth at the insertion of the Fallopian tubes. The right ovary is enlarged to the size of a pigeon's egg by a cystic degeneration; on section two blood-cysts are found, one large and the other small, and both containing fluid blood. There is very little ovarian substance left. The left ovary is small and sclerosed, and shows on section one or two bright yellow spots about the size of a pin's head. Both tubes look healthy, except that they are studded here and there with sub-peritoneal cysts. In each broad ligament below the tube is a plexus of wide vessels with markedly thickened walls which anastomose freely with each other. One of these flattened-out vessels measures 5 cm. in diameter. They stand out distinctly from the parovarium, which is rather small; on the left side is a large hydatid of Morgagni.

On laying open the uterus the walls are seen to be thick and hard, measuring 2·5 cm. in thickness in the middle of the body; from the cut surface the vessels stand out prominently, and have apparently thickened walls. They are most marked in the outer third of the wall. The mucosa is smooth and healthy looking, but paler than normal. There is a small blood-clot at each tube corner, but otherwise the cavity is empty. The cervix is quite healthy.

*Microscopic Examination.*

Section from middle of uterine body.

*Mucous Membrane.*—This measures 1 mm. in thickness on
Fig. 1.—Mucous membrane from middle of uterine body, showing the small celled infiltration, the normal appearance of the glands, and the increase in number and marked thickening of the walls of the capillaries (×250).

Fig. 2.—Another area of the mucous membrane showing the very marked thickening of one of the capillaries. Note the concentric arrangement of the fibres (×250).

(To face page 74.)
an average, but at one or two places it dips down rather more deeply into the muscular wall. The lining epithelium is in most places intact, consisting of the usual single layer of columnar cells. The absence of these cells at certain places is probably due to faults in the preparation of the specimen. The uterine glands are normal in appearance; there is no tendency to proliferation of the epithelium lining them, and no increase in their number. At one or two places they dip rather deeply into the muscular wall, but not more so than is normally seen, and in none of these areas is there any epithelial proliferation. The interglandular tissue shows a very marked infiltration, with small round cells. Towards the free surface the tissue is loose and open, and at one point is infiltrated with red blood corpuscles; this area is small in extent and the amount of blood effusion is trifling. In the deeper parts of the mucosa, and especially near the muscular wall, the tissue becomes denser and more fibrous, and at places shows a tendency to a whorled arrangement, this being more marked round the glands and blood-vessels.

The vessels of the mucosa show very striking changes. Looking at a section under a low power one is at once struck with the large number of vessels in the field, and the ease with which, owing to the thickness of their walls, they can be seen. This is very well brought out in Fig. 1. The walls of the capillaries, instead of consisting practically of a layer of endothelium, are thickened by a deposition round this layer of concentric lamellae of fibrous tissue with well-stained nuclei (Fig. 1). In some of the vessels the thickening is of a hyaline character, the wall taking on a uniform stain with eosine, with nuclei very far apart. Fig. 2 shows this very well. This vessel is situated in a piece of mucosa lying deeply in the muscular wall. When seen in longitudinal section the vessels are tortuous, and this may account to some extent for the
apparent increase in their number in transverse section. Some of these thickened vessels can be seen running up to the free surface of the mucosa. While the vast majority of the capillaries of the mucosa show these obvious signs of disease, there are others which are apparently healthy with extremely thin walls, and a lining of a single layer of endothelium. It is noteworthy that the laminae of these vessels are larger in many cases than those of the diseased ones.

Muscular Coat.—There is no obvious change in the muscle fibres, but a slight excess of fibrous tissue. At a point about the middle of the wall is a small area infiltrated with leucocytes. The vessels are increased in number and the artery walls very considerably thickened. This thickening is in most cases due to an increase in the middle coat, and to a less extent in the outer (Fig. 3). In some the inner coat is also irregularly thickened, distorting and contracting the lumen (Fig. 4). In some of the smaller arteries there is a hyaline degeneration. These changes are most marked in the inner and middle thirds of the wall. In the cervix the vessels are increased in number, but there is no special thickening of the walls. The glands here are healthy.

Uterine Artery.—A section of this vessel, as it enters the wall of the uterus, shows very little change from normal, the only noticeable feature being the way in which the internal elastic lamina seems to be broken up into a large number of strands. There is no thickening of the intima or of the tunica media.

The vessels in the broad ligament have thick walls. At a single point in one of them there is commencing calcareous degeneration of the intima. This is the only area of calcification in any of the vessels. The middle coat is very thick, and makes up the greater part of the wall.

The first case I can find in the literature resembling this
FIG. 3.—Vessel in the middle third of the muscular wall showing thickening of the media, and to a less extent of the adventitia (<i>x</i>50).

FIG. 4.—Vessel in the middle third of the muscular wall showing thickening of media and irregular thickening of the intima (<i>x</i>60).

[To face page 76.]
one is recorded by Pichevin and Petit (1). The patient, aged 41, had an attack of typhoid fever eleven years previously, followed by menorrhagia; after which came a normal confinement followed by regular menstruation. Two years later she had another child, with haemorrhage during the early months of pregnancy, and subsequently a tendency to menorrhagia. After a loss of blood lasting six months she was treated by curetting, which was followed by regular menstruation for a year. The haemorrhage then returned to such an extent that hysterectomy was performed, the diagnosis being uterine fibroid. The uterus when removed showed an increase in its walls to three times the normal thickness, but no evidence of fibroid or malignant disease. The mucosa was healthy, but the blood-vessels of the muscular wall, especially its middle section, were increased in number and thickness through abnormal development of the perivascular connective tissue. Patches of embryonic connective tissue were also noted in the walls, with dilatation of lymphatics.

Two years later Reinecke (2) reported four cases of hysterectomy for haemorrhage in patients aged 40, 43, and 45. Microscopic examination showed in all cases a uterine mucosa with normal glands, but infiltration of small cells in the inter-glandular tissue; and in two cases the capillaries and small arteries thickened—in one case all the three coats, in the other the tunica media, and to a smaller extent the adventitia. In the other two cases the vessels of the muscular wall alone showed a remarkable thickening of the tunica media, and to a lesser extent of the adventitia, the intima remaining unchanged. The changes in the vessels he compares to that described by Saville (3) in the coronary arteries of the heart. It is an arterio-sclerosis, and related to the age of the patient. No other cause, such as alcohol or syphilis, could be traced, and there was no affection of the arteries elsewhere. The connective tissue changes he regards as secondary, the muscular tissue of the uterus being
replaced in parts by connective tissue as the result of the circulatory changes.

Writing in the *British Medical Journal* for 1899, Bland Sutton (4) says:—

"Amongst these conditions there is one to which sufficient attention has not been given; its leading features are these: the subjects are usually mothers between 35 and 45 years, complaining of menorrhagia, which in some cases lasts from 14 to 18 days, and at times is so profuse as nearly to bleed them to death. When the uterine canal is dilated artificially the cervix tears rather than stretches, and the endometrium is quite smooth, but the walls of the uterus are hard and resisting, and the curette makes a harsh grating sound in passing over it.

"Curetting arrests the bleeding for a few months. In the first case of this kind which seriously attracted my attention, the patient had been curetted by obstetric physicians seven times. After very careful consideration, I proposed removal of the uterus; but at a consultation with very competent advisers, complete oophorectomy was recommended and carried out. The menorrhagia continued unabated, and two years later it became absolutely necessary to perform vaginal hysterectomy. Convalescence was slow, but in the end a complete return to permanent good health and vigour was the consequence. Two other examples have come under my care in which long-continued drug-treatment, varied with the annual and bi-annual curettings, had failed in the hands of physicians; in each I removed the uterus by the vaginal route with success and permanent good consequences.

"In these three cases the uterus was larger than normal, with thick, tough walls; on section the arteries stand out prominently, exposing their thickened coats; microscopically it is seen that the muscle tissue is replaced by an abnormal growth of fibrous tissue. Judging from the history of these
cases, I take the view that these fibrotic changes are secondary to infective chronic metritis, and are analogous to that curious fibroid change (syphilitic) which occurs in the muscle tissue of the heart, and which entails consequences so serious as sudden death.”

Pozzi (5) has described two cases, both of the patients younger than those already mentioned. His first was 34, a v.-para, two children being dead-born, and one an abortion. Nine months before operation she began to have considerable loss, the discharge occurring twice a month. Four months before she had had abdominal pain in the left iliac fossa, which was worse before the discharge. From the uterine enlargement it was supposed to be a small fibroid, and hysterectomy was performed. A plate is given, showing the vessels under a low (100 diameters) and high power (250 and 500 diameters). There is an increase of the elastic fibre, which is seen gradually to replace the muscular coat; sometimes there is an elastic thickening only on one side, or it forms a more or less complete ring, replacing in whole or in part the muscular wall. It also extends into the connective tissue around the vessels and breaks up the muscular bundle. The process which is most marked in the larger arteries and veins affects also the small capillaries and the lymphatics. The mucosa shows only dilatation of some of the glands; the lymphatics are dilated at the junction of the mucosa and muscular wall.

The second patient was also a v.-para, aged 30, the last child being born two and a half years previously. Since then she had had abdominal pain, and for the last eighteen months menstruation had lasted eight to ten days. She was curetted without benefit, and hysterectomy was performed. The uterus was increased to twice its size, and on section had a cribiform appearance. The walls were extremely vascular, the arteries standing out in a ring of connective tissue, which separated them from the muscular tissue around. The mucosa is
thickened and composed of an embryonic tissue, the cylindrical epithelium has completely disappeared, the uterine glands are moderately dilated, and preserve their epithelium. The arteries show partial loss of the endothelium, the sub-endothelial tissue is replaced by elastic fibres, the muscular coat is invaded by elastic tissue, which in part replaces it entirely. The adventitia is greatly hypertrophied, and extends outwards in islands. The veins show similar lesions, only containing less muscular fibre; the elastic elements have found less obstacle, and show a remarkable development, which keeps the veins gaping. The lymphatics show an increased formation of elastic tissue round them. The connective tissue is increased through the whole substance of the uterus.

One more case has been recorded by Simmonds (6) of hysterectomy, in a woman of 54 years of age, performed for continuous hæmorrhage, which had resisted other treatment, and where the only pathological change found was marked sclerosis of the uterine artery. Perhaps we should also include a case reported by Morisani (7), where he had to extirpate the uterus on account of hæmorrhage in a patient with a history of syphilis. The microscopic examination showed, in addition to numerous extravasations, a proliferation of the connective tissue, and advanced degeneration of the blood-vessels, which he describes as angio-sclerosis, and regards as a manifestation of old-standing syphilis.

These cases, which are all that I have been able to gather from the literature, have this in common, that the walls of the vessels are thickened, but in different ways. In Reinecke's cases there was hypertrophy, both of the muscular tissue and fibrous tissue; in Bland Sutton's, Pichevin's, and my own, there was increase of fibrous tissue, while Pozzi describes an increase of elastic tissue. How this thickening is brought about is not plain. Bland Sutton attributes it to an infective chronic metritis. The fact that in some cases the uterine
vessels are alone affected suggests that it is a process stretching upwards from the uterus. And in a case of sclerosis, limited to these vessels, in a patient suffering from tuberculous peritonitis, Müllerheim (8) asks whether there may not be an etiological connection between the two. In this case the ovarian and uterine arteries were calcified throughout their whole extent, while the vessels in other parts of the body showed no change.

On the other hand, were it due to this cause, we would expect to find it more frequently, and there would be no reason for its occurring in advanced life. There is a great divergence of opinion among pathologists as to the etiology of sclerosis and even as to its nature, and we must leave them to settle this point. The age of the patient shows that senile changes are a more important factor than infection.

It is important to note that in none of the patients was the menopause established. Arterio-sclerosis after the menopause has been frequently described, but never as accompanied by serious hæmorrhage. One of the most frequent conditions found post-mortem in the uterus of elderly women is hæmorrhages into the endometrium and muscular wall, with sclerosis of the uterine artery. The condition is thus described by Klob (9).

"Hæmorrhage into the tissue of the uterus develops principally in old women, and has been named apoplexia uteri by Cruveilhier. In this condition the whole uterus is in a state of senile atrophy, becomes flaccid, friable, and the rigid arteries project like whitish stumps which have not retracted from the surface of the cut sections. The mucous membrane of the posterior wall especially (and sometimes exclusively), and the tissue of the uterus underneath, though never to any considerable depth, appears to some extent, and occasionally wholly, reddish-black, brittle, easily torn, changed into a
uniform mass resembling clotted blood. Cruveilhier differentiates according to the thickness of the affected layers, three kinds or degrees of the affection, and states that, if the hæmorrhage extends beyond the mucous membrane into the uterine substance, hypertrophy of the latter is always present, a statement which I have never been able to substantiate.

"Occasionally in this affection blood-clots are found in the cavity of the uterus, but I remember cases where a slight hydrometra was present simultaneously with an accumulation of tough mucus, which showed not the slightest trace of admixture of blood, a proof that the hæmorrhage took place entirely, and only in the parenchyma. The mucous membrane of the cervix and of the vaginal portion never participates in this disease."

In a case of Herxheimers' (10), quoted by Palmer Findley as one of apoplexia uteri, while there was plugging of the uterine and vaginal arteries, this seems to have been due to embolism rather than sclerosis.

In the more recent literature on this subject I find that Popoff (11) describes it in a patient aged 40, in whom there were hæmorrhagic infarctions in the substance of the uterus, with endarteritis and calcareous degeneration of the uterine artery. Both uterine arteries were also plugged by thrombi, and Popoff attributes the hæmorrhagic infarction to embolism or thrombosis of the uterine vessels, and says that the changes in the uterus can only arise when the closure of the vessel is rapid, bi-lateral, and simultaneous. This is a different process from a slowly progressing sclerosis.

Von Kahlden (12) describes eight cases, all in advanced life, the ages and cause of death, or chief lesion found post-mortem, being as follows:—at 75 from pneumonia, at 75 from endocarditis, at 52 from cancer of the gall-bladder with metastases, at 66 from fatty heart, at 75 from bronchitis,
at 76 from bronchitis and emphysema, at 83 from senile changes in all the organs, at 87 from pneumonia. To these cases of von Kahlden we may add two reported by Dittrich (13) in patients aged 65 and 68, who died from affections of the lungs.

Palmer Findley (14), in his interesting paper on Arteriosclerosis, puts these cases alongside of Reinecke's. But they differ in these three features: the patients were well up in years, some of them many years past the menopause, the cause of death was not related to the uterine lesion, and the hæmorrhage associated with the sclerosis was trivial. His own case belongs to this group, and from the fact that in it we have the clinical record and pathological condition given with great detail, I quote it more fully. The patient, aged 70, was in good health up to five months before death, when she began to suffer from insufficient heart action and extreme anæmia. Fourteen days before her death she was seized with a pain in the right side of the chest that was immediately followed by spitting of blood and some vomiting. Simultaneously with the onset of the pain in the chest there appeared a pain in the hypogastrium, and this was followed by a slight bloody discharge from the uterus. At the post-mortem there was found general sclerosis of the arteries of the body, the uterine artery being calcareous throughout almost its entire extent. On opening the uterine cavity a small quantity of bloody secretion was found, and the endometrium was of a dark red colour; the cervical mucosa was apparently normal.

On the cut surface of the corpus the blood-vessels stood out prominently, the lumina gaping and the walls thick and calcareous. Numerous small blood extravasations were seen in the uterine wall, giving a mottled red and grey appearance. Microscopic sections of the uterine wall showed an intense blood infiltration of the endometrium, and to a variable depth
of the uterine wall. The walls of the arteries were greatly thickened, but particularly in the tunica media, though the intima and adventitia shared in the hyperplasia. In some of the vessels calcareous deposits were found, arranged in a crescentic, annular, and segmentary manner.

These cases of "apoplexia uteri," associated with arteriosclerosis, belong to a different category, and it is noteworthy that the patients in whom this condition of apoplexy has been described were past the menopause. This leads up to the question—how is the bleeding in cases like my own caused? It does not seem to be a case of vessels with weakened walls, for it is interesting that we do not find hæmorrhage into the substance of the uterine wall as in the cases of so-called apoplexy. Such weakening of the vessels associated with slight hæmorrhage has recently been described by Gottschalk (15) as a cause of bleeding after the menopause. The patients were multiparae of 56 and 61 years respectively; the mucosa was necrotic and broken up by hæmorrhages, the walls of the arteries, especially the media, showing retrogressive changes.

It is rather a case of vessels with rigid walls, which have lost their power of vaso-motor contraction. These are not a source of danger to the patient, apart from the changes of the menstrual period. It is these changes, plus the condition of the arteries, that cause the dangerous hæmorrhage. A like condition of the arteries has been described as a cause of post-partum hæmorrhage by Küstner (16). The patient, a v.-para, died from hæmorrhage with a contracted uterus, the hæmorrhage apparently coming from a single vessel in the placental site, the size of the radial artery, which had not been closed by uterine contraction.

The etiology is obscure. In this paper we are dealing with sclerosis of the vessels, and not sclerosis of the uterus, which has been the subject of an interesting discussion before the
Society of Obstetrics, Gynecology, and Pediatrics of Paris (17). But it is of interest in passing to draw attention to the point of view taken by Richelot, who drew a distinction between sclerosis and true inflammation. The former depends on vascular changes, the latter on infection. I refer to this because I have quoted Bland Sutton's (18) view that the changes in the vessels are due to infection.

As regards the diagnosis, I would only say that it cannot be diagnosed during life. By the history and careful examination, supplemented if necessary by curettage, we can exclude such causes as the retained products of conception, or malignant disease; but we have no means of ascertaining the condition of the blood-vessels of the uterine wall. Curettage will throw light on the condition of the capillaries in the mucosa, which undergo changes in endometritis. This case, however, belongs to a different category, both in its clinical phenomena and the seat of the lesion.

A still rarer cause of hæmorrhage, due to the condition of the vessels, has been described by Pilliet and Baraduc (19), in which there was angiomata of the vessels. Gottschalk (15) has recently added another cause after the menopause.

The condition of the arteries in other parts of the body does not give information as to that of the uterine vessels, and we have seen that arterio-sclerosis is found in them without being present elsewhere.

The only treatment is hysterectomy.

The cases that have come under my notice in the study of the literature of the subject fall into three groups:—

1. Cases of arterio-sclerosis, usually in women advanced in life, with hæmorrhages and other marked naked-eye changes in the uterine wall, but no external bleeding of consequence. This condition was first described by Cruveilhier under the term apoplexia uteri, and subsequently by Rokitansky and Klob.
Examples have been given recently by Popoff, von Kahlden, Palmer Findley, and Dittrich.

2. Cases of uterine hæmorrhage, so severe as to call for hysterectomy, of which no pathological account is given, or nothing was found to account for the bleeding. To the former category belong Martin’s (20) cases, and to the latter one reported by Switaliski (21).

3. Cases of severe hæmorrhage, calling for hysterectomy, in which arterio-sclerosis is the prominent lesion. While other minor changes in the mucosa are present, such as small-celled infiltration, there is no evidence of hæmorrhages or infarctions, such as characterise the first group. Of this I can find only eleven cases recorded besides my own, namely, three by Bland Sutton, four by Reinecke, one by Pichevin and Petit, two by Pozzi, and one by Simmonds. Perhaps Morisani’s case should also be included. The fact that only twelve have been recorded gives no data as to its frequency, because it is a condition difficult to recognise.

REFERENCES.

BY DR. A. H. F. BARBOUR.


Professor Simpson said they had listened with great interest to Dr. Barbour's paper. It was an important contribution to the elucidation of a condition that is very obscure. Hämmorrhage in women at this time of life was often very puzzling, and he had been content to treat it with curettages and the applications to the interior of the uterus that usually sufficed to arrest the hämorrhage. In cases where the usual treatment failed he had seen good results from the administration of strophanthus, but probably there had not been such marked degeneration of the vessels as had been described. He said the condition was
new to him, in the form that had been brought before them, although he was prepared to appreciate it from having recently read an article by Theilhaber on the blood-supply of the uterus. He thanked Dr Barbour for his extremely valuable contribution, which would awaken the attention of British practitioners to this subject. He quite understood that the condition was one that nothing short of extirpation of the uterus could do much for.

Dr Jessie MacGregor drew attention to the fact that the distinction between the two sets of capillaries, those with thick walls and those with thin walls, mentioned by Dr Barbour, was observable as a physiological condition of the endometrium. The thin-walled form was easily distensible and did not become thickened, whereas the thick-walled thickened readily under various pathological circumstances. She also stated that it was possible to obtain the diagnosis of sclerosis of the vessels of the uterine mucous membrane from curettings. In several cases that she had had the opportunity of observing, the curettage showed the changes in the vessels very distinctly.

Dr Haultain considered that the conditions described were similar to those met with in atrophic or senile endometritis, so far as he could see from the micro-photos, in which there seemed to be a marked diminution in the glandular tissue with increase of the inter-glandular cellular elements. He had on several occasions met with similar conditions, and had found that curettage was usually an efficient means of curing the haemorrhage. He therefore considered that Dr Barbour’s treatment of hysterectomy, without previous curettage, was somewhat too radical. Doubtless there were some cases in which curettage was insufficient, but they were probably few.

Dr Barbour thanked the members for the way in which they had received his paper. He thought what he had described
was a condition *per se*, quite separate from ordinary endometritis with hæmorrhage. Cases where the hæmorrhage was so continued that it endangered the life of the patient, and where nothing would do but hysterectomy, were extremely rare. If one recognised that the condition was probably one of arterial sclerosis, from the fact of enlargement of the uterus, with smooth mucous membrane, he thought it would be wise to attempt curettage, and even curette again, before proceeding to more radical treatment.

VII. THE APPLICATION OF BIER’S HYPERÆMIC TREATMENT TO INFLAMMATORY AFFECTIONS OF THE FEMALE GENITAL ORGANS.

By E. W. Scott Carmichael, M.D., F.R.C.S.Ed.

The valuable addition to the treatment of acute and chronic joint and cellular tissue affections by Professor Bier, in inducing an active or passive congestion of the affected parts, and the success resulting from it, led Professor Martin of Greifswald to apply it to similar affections of the female genital organs.

The members of the Society are probably already familiar with the principles of Professor Bier’s treatment, so that it would be superfluous for me to refer to it in full; but I would remind you that his treatment of general inflammatory conditions, whether of joints or of the cellular tissues, consists in hastening the natural processes towards cure of the diseased part, either by causing a passive or venous congestion, or by promoting an active or arterial hyperæmia.

He ascribes to this method of treatment, in an article appearing in *Der Therapie der Gegenwart*, the following actions. 1. The power of alleviating pain. 2. A bactericidal action. 3. The power of promoting absorption and loosening
adhesions. 4. The power of stimulating general nutrition and regenerative processes.

I think, if we consider these actions, and the effect they are likely to have, when brought to bear on pelvic exudations, that the addition of this means of treatment is a very valuable one, and the results obtained by Professor Martin in the Greifswald Frauenklinik have proved it to be of great value in these obstinate conditions.

For obvious reasons, passive hyperæmia is impracticable in the treatment of pelvic disease, and it is to active hyperæmia that we have to turn for the relief of such conditions.

Hot air as applied to the surface of the body generally has been proved by the experiments of “Klapp” not only to promote an active superficial hyperæmia, but also to cause an equally well-marked hyperæmia in the deeper parts, as for instance in the abdominal cavity, so that the local application to the lower part of the abdomen and the vagina has a deeper action than merely on the surface of the part affected.

Again, Professor Bier has proved that not only is there increased local hyperæmia, but that there is a general stimulation of the circulation, and of the nutritive changes throughout the body.

The method of application is as follows:—The patient is placed in the apparatus, which is in the shape of a large box, with two openings at the lower end, through which the thighs project, and a large opening at the upper end for the lower part of the trunk. It encloses the body from the costal margin above, to just above the knee-joints below, so that the whole abdomen and pelvis are exposed to the action of the air, which is gradually heated from an adjacent chamber in the box by means of a spirit-lamp or gas, the temperature being controlled by means of a thermometer inserted through the roof of the apparatus. As a rule, the process of heating lasts for half an hour, by which time the temperature has reached 130°-150° C.
The patient is only covered with a vest or night-dress, which can be drawn up to allow the whole abdomen and pelvis to lie bare.

A tubular speculum may be introduced into the vagina, to allow of the better access of the hot air to the fornices.

As a rule, on the first occasion the patient begins to complain of the excessive heat when the temperature reaches 100° C., and cannot stand more than 110° C. on the first day, but at each subsequent application she can bear a higher temperature, often up to 150° C., without inconvenience.

The whole surface of the body included in the box is in a state of acute hyperæmia, which begins when the temperature approaches 100° C. Profuse sweating occurs, and the patient feels quite comfortable, until towards the end, when the temperature reaches its limit. The heating apparatus is then removed, and the air in the box allowed to cool gradually down to the body temperature, before the patient is allowed to leave the apparatus.

The patients feel greatly relieved by this treatment, and rapidly improve. Physiological processes throughout the body are stimulated, so that appetite increases, the patients become more energetic, and no longer have that listless, apathetic appearance which these patients so frequently present.

The local changes are hastened, so that absorption or suppuration more rapidly supervene. Even after four or five applications, a previously stone-hard exudation begins to soften and break down.

This treatment in the Klinik has largely taken the place of all former local applications such as glycerin and ichthylol. Certain contra-indications to the treatment must be borne in mind. For obvious reasons, patients suffering from high fever should not be subjected to the treatment. It should be discontinued during a menstrual period. Certain diseases, such as cardiac disease, contra-indicate its use.
The following cases are two of many which might be given as examples of this method of treatment. They illustrate the two results expected of such treatment—either a hastening of absorption, or a hastening of suppuration.

Shortly, they are as follows:—Frau G., æt. 35, gave birth to seventh child three months before admission. Left-sided exudation size of man's fist on admission. Had been treated with plugs and douches. Walked with difficulty, and unable to work; no rise of temperature. Hot-air treatment applied daily on twenty-two occasions. Rapid improvement. Loss of pain after four or five applications. At end of a month completely relieved of all pain and difficulty in walking. Mass had disappeared, only slight resistance remaining.

The next case was that of Frau V., æt. 22, a primipara. Birth of child six months previously. On admission, double lateral exudation in both parametria. No rise of temperature. Hot-air treatment begun on third day after admission, the patient being subjected to a temperature of 125° C. on the first occasion. After twenty-two applications, the tumour was found soft and fluctuating. Excised through posterior fornix. Never any temperature; left hospital free of pain, with only slight resistance in parametrium.

In the more recent cases of exudation, the hot air tends rather to favour suppuration, while in the more chronic cases, absorption is the more frequent result. It seems to act by hastening the natural processes, and in this way cutting short the duration of cure. It is extremely valuable in all chronic forms of cellulitis, e.g., that associated with the name of Freund, and those forms which come on insidiously after child-birth and are associated with considerable pain. It has now taken the place of all local applications, such as vaginal douching, glycerin, ichthyol, iodine, etc., in the Greifswald Klinik, its value not only being from its local action, but also from the general stimulating action on the whole system.
It has also been applied with conspicuous advantage to inflammations of the tubes and ovaries, especially of a chronic nature.

But there is one condition in which it would seem to have a markedly deleterious effect, namely, tuberculous affections of peritoneum and uterine oedema. It is interesting to note that this corresponds to Bier's experience in tuberculous joint affections, in which it is contra-indicated.

In conclusion, one is justified in looking upon the hot-air treatment as a valuable addition to therapeutic measures in this class of cases, although there are some in which little or no benefit is derived.

In comparison with the older methods of treatment, it may be said to more than hold its own.

I have endeavoured to give the main points in this paper as shortly as possible.

Professor Simpson thanked Dr Scott Carmichael for his paper. He had been impressed with the observations of Bier, and had tried a bath in the ward. It had certainly given relief in one or two cases. Dr Scott Carmichael had given a very lucid explanation of the method of treatment and indications of the results likely to be obtained.

Dr Haultain seconded the vote of thanks to Dr Scott Carmichael. He was glad to hear this method of treatment described by one who had had actual experience of it. He supposed it was an extension of the idea of hot-water douching, where a more potent method could be used by means of hot dry air.

Dr Jessie MacGregor said that she had used for some time, at Bruntsfield Hospital, a modification of Dowsing's method to obtain hot-air treatment in inflammatory diseases in the pelvis. The apparatus consisted of an arch covering the pelvic region, with ordinary electric lamps fitted on in sufficient quantity
to secure the required heat. She had found it of most service in recent cases, but not of much use in old-standing cases with formation of adhesions and much pain. She had also noted the marked tonic effect mentioned by Dr Carmichael.

VIII. CASE OF FATAL COMPLETE IRREDUCIBLE PROLAPSUS UTERI.

By G. F. Barbour Simpson, M.B., F.R.C.S., M.R.C.P., Assistant to the Professor of Midwifery and Diseases of Women in the University of Edinburgh, etc., etc.

Kustner, in his article on Displacements of the Uterus in Veit’s Handbuch der Gynäkologie, says: “It is very seldom that the consequences of prolapse lead to fatal diseases. In general, patients take their prolapse, even when they have completely neglected it, unpunished on into old age without being seriously distressed by it or its complications.”

Spiegelberg, however, has put on record and figured a case where a patient died of peritonitis associated with irreducible prolapse, and the following notes of a case are of sufficient interest as illustrative of a condition which was not only impossible to relieve by palliative measures, reduction, or operative interference, but which in itself ultimately proved fatal to the patient.

Mrs B., laundress, aged 42, was admitted to the Buchanan Ward, Royal Infirmary, on 30th September 1904, complaining of falling down of the womb. A fortnight previous to admission, her medical attendant, Dr Orr, had been called in, as she had been suffering from diarrhoea for two weeks, along with

fever varying from 101.6° to 103° F., and a somewhat slow pulse. Typhoid fever being at first suspected, the Widal test was applied, but was found to be negative.

After the first week, Dr Orr's attention was directed by the patient to a swelling protruding from the vulva, which he diagnosed as prolapse of the womb, which was found impossible to reduce. He applied an ice bag, and three days later, in consultation with Dr J. W. Ballantyne, reduction was again attempted under chloroform, without result. In consequence, she was admitted into hospital as above stated.

General History.—Two years ago, patient began to experience pain in the region of the womb. The pains were of a down-bearing character and came on at intervals, especially after a hard day's work. No difficulty was experienced at this time in micturition, but patient noticed that if her bowels were constipated her symptoms were worse. Eight months later she first noticed something protruding slightly from the vaginal orifice. She had no idea at the time what was wrong, and did not seek medical advice. The protrusion became more and more evident, in spite of the patient endeavouring to prevent it by wearing a support. After a further interval of eight months the womb was observed by her to be entirely projecting from the vaginal orifice, and, once out, she found that it was impossible to return it. At first, walking was not much interfered with, but sitting was found to be uncomfortable, and she always felt better when moving about. At this time difficulty was experienced in micturition, accompanied with pain before and during the act. The bowels were not affected. From the beginning of the trouble two years ago the periods became affected, being increased both in regard to quantity and duration. As the womb became more and more established in its new position, she began to experience impediment in her movements, and, in addition, pain of a severe dragging nature. Since pro-
trusion, the mass was noticed to be inflamed, with a tendency to enlargement and ulceration. The patient took to bed fourteen days before admission, as she then experienced diarrhoea, with slight vomiting and irregular fever. Dr Orr was sent for, but the patient thought so little of her condition that she did not inform him about the tumour mass until a week later, previous to which, and in regard to the prevailing symptoms, she was being kept under observation as a possible case of typhoid fever.

Previous History of Patient.—Ten years ago she had a child; the labour was severe, and forceps were employed. The puerperium was normal, but she did not nurse her child. The menstrual type and habit were normal up till two years ago, and there was no history of any miscarriage. Patient had three brothers, two of whom died of phthisis.

Physical Examination.

The abdomen on inspection presented no prominent irregularity, umbilicus retracted, linea nigra and striae were well marked.

On deep palpation, which at any point over the abdomen elicited pain more or less severe, a hard mass, rough in outline, about the size of two fists and slightly mobile, was felt stretching across about the level and extending for some distance below the umbilicus. On moving this mass the whole intestines apparently moved along with it. Projecting from the vaginal orifice a large tumour was seen, pyramidal in shape, 5½ inches in length and 4 inches in breadth, and constricted at the vulva. The os externum was distinctly visible at the lower end of the tumour, with the lips greatly hypertrophied, everted, and extensively eroded. The surface of the tumour was dark red in colour and covered with glairy mucus at its lower extremity, and presented on the surface the appearance as of an epidermic structure, so often assumed in cases of long-
standing prolapse. Numerous shallow ulcers of varying shape and size were noted at different points of the mass besides the general excoriation of the lips. On either side, below the labia majora, beginning at the neck of the tumour, was a long narrow strip of ulceration corresponding to points of contact with the inner surface of the thighs. The everted vaginal wall was thickened and oedematous, and at points presented a macerated appearance with loss of tissue.

The whole mass was extremely sensitive to manipulation, and with a finger in the rectum the fundus of the enlarged uterus could be felt in the back part of the swelling. A catheter passed into the bladder revealed it lying in the front part of the herniated mass entirely below the level of the external pudenda, and there were also to be felt fluctuating spots, the nature of which it was impossible to divine.

_Treatment._

With a view to reducing the oedema and favouring as far as possible the reduction of the mass, the patient was placed in the recumbent posture, with the foot of the bed elevated and pillow removed. The tumour mass, surrounded with boric lint, was slung from both thighs by means of a domette bandage. Owing to the frequent passage of water, almost every hour, the dressing required constant renewal, thus rendering it difficult to keep the enveloped part thoroughly clean and dry.

The possibility of the hard mass in the abdomen being due to the lodgment of scybalous masses, was removed by the administration of castor oil and enemata, but without any appreciable diminution.

The patient was subject to attacks of vomiting at intervals, which was relieved by means of bismuth and hydrocyanic acid, and the suspicion was entertained that malignant degeneration was developing in the peritoneal cavity. From day to day the patient showed increasing signs of restlessness, and natural sleep
was impossible. The temperature continued to swing from normal in the morning to a little over 101° F. in the evening, and the pulse-rate accelerated from 92 to 140. Within the last twenty-four hours mental symptoms became prominent, and she died eighteen days after admission.

Pathological Report.

Dr Stuart Mc' Donald made a post-mortem examination of the case, and has kindly given me the following notes:—

External Examination.—Rigor, general emaciation, complete prolapse of uterus, which shows much superficial exoriation.

Thorax.—Lungs: some chronic adhesions found over both; both are also slightly emphysematous, more especially the right. On section both are somewhat dry and tough, with exception of bases, which show some hypostatic congestion. No pneumonia or tuberculosis present.

Heart.—Weight, nine ounces. Surface shows nothing abnormal. Right auricle and ventricle slightly dilated. Valves and orifices show nothing abnormal beyond some degenerative thickening of anterior cusp of the mitral. The myocardium shows some pigmentary degeneration and a slight degree of diffuse fatty degeneration.

Abdomen.—Dense chronic general peritonitis; intestines and omentum firmly adherent to abdominal wall. Condition extends down into pelvis, and is even more marked there. The matting is so intense that the reduction of the prolapse is a physical impossibility.

The spleen shows chronic perisplenitis, and on section there is some congestion and pigmentary change.

The liver shows chronic perihepatitis and diffuse fatty change. Gall-bladder shows nothing abnormal.

The kidneys are pale, but otherwise show nothing specially
General view of Prolapse taken during Life.
abnormal to the naked eye. There is no dilatation of the pelvis, and there is only very slight dilatation of the ureters.

The dense adhesions of the coils of intestine to one another made dissection in situ impossible, and the contents of the lower part of the abdomen and pelvis were removed entire, together with the prolapse and external genitalia. On examination, there was found between the umbilicus and pubis a collection of pus evidently communicating with the deeper part of the pelvis. Below the umbilicus was a dense hard mass consisting of adherent coils and thickened, chronically inflamed mesentery. The adhesions and kinking of the coils had led to considerable obstruction of the lumen at many places. In dissection the bowel was torn at several places, but no ante-mortem rupture could be found, and in the intestine, as far as could be examined, no ulceration was discovered.

The entire mass was hardened in formalin, and the following description is taken from the prepared specimen. The mass projecting from the vulva measures about 5½ inches vertically; it is flattened laterally, measuring about 4½ inches antero-posteriorly by 3½ inches laterally. The surface of the mass shows superficial excoriatiou, with irregular islets of thickened epithelium. A median sagittal section shows the relation of parts with numbered index. (See Plate.) In the right half posteriorly the rectum and anus are seen; advancing forwards, the smooth-lined pouch of Douglas is observed; about 1½ inches above the lower limit of the pouch of Douglas is the outer aspect of the fundus. The uterus is not inverted, and the uterine cavity is well seen. In front of the uterus the utero-vesical pouch filled with pus is next observed; the lower limit is 2½ inches below the level of the fundus, and the space at the lower part is about 1 inch across. From this space a track of suppuration can be traced upwards among the coils of intestine for about 8 inches. At the upper end an abscess cavity with roughened walls is well seen: this is the collection that was opened at the post-mortem.
About ¼ inch above the fundus there is a pus-containing pouch of peritoneum extending downwards behind and to the left of the pouch of Douglas. This opens into the utero-vesical collection. The broad ligaments and tubes are twisted, and their relations are difficult to make out. Both are found in the left half of the specimen, but apparently the left ovary and tube lie still in the pelvis above and behind the rectum, while the right lies outside the vulva in the prolongation from the utero-vesical pouch mentioned above.

Continuing the description of the right half of the specimen, the bladder, also entirely outside the vulva, with enormously thickened walls and almost obliterated lumen, is next observed. A number of small calculi were also found in the bladder. The urethra is also well seen, and was quite patent. A special feature is the everted and greatly thickened vaginal walls. High up among the intestinal coils, the masses of chronically inflamed mesentery and mesenteric glands are well seen. Microscopical examination of those masses shows a simple chronic inflammatory condition without trace of tubercle or malignant disease.

**General Remarks.**

The case is remarkable from the apparently slight inconvenience caused to the patient, who up to a fortnight before her admission into hospital was going about her ordinary work.

There can be little doubt that the condition was of gradual occurrence. As to the cause of it, we note that the patient's one labour was a severe one, necessitating delivery by forceps, and that involution of the uterus would be retarded somewhat in the absence of lactation. Further, her daily occupation must not be overlooked as a probable factor in the causation.

Various conditions have been described as rendering reduction of a prolapse mass impossible, such as fibroid tumour in
Right half of Tumour (half the natural size). By Richard Muir.

1. Fundus uteri; 2. lower end of cervical canal with everted thickened lips; 3. hypertrophied vaginal wall; 4. utero-vesical pouch with flaky deposits of lymph; 5. pouch of Douglas; 6. wall of bladder; 7. urethra, seen to the left, displaced upwards; 8. anal canal; 9. inflammatory mass in mesentery; 10. collection of pus among coils of small intestine in direct communication with 4; the upper limit is seen about 1 inch higher.

{To face page 100.}
the wall of the uterus, the presence of ovarian tumour, stone or stones in the bladder of considerable size, various degrees of peritonitic adhesions, and it must be under the head of this last category that the above-recorded case is included.

How the abscess cavity, discovered quite accidentally post-mortem, came about, must be a matter of pure conjecture.

It is not clear how the septic processes to which the patient ultimately succumbed originated, but it is obvious that the long-standing displacement had become associated with peritonitic adhesions among the dislocated viscera, and from the bowels or eroded surfaces of the tumour septic organisms may readily have found their way into the tissues and on to the peritoneal cavity, where the pus accumulation had taken place. The spread of the septic process among the intestinal coils had no doubt already taken place before the patient came under observation.

The displacement of the bladder brought about by the prolapse is of considerable interest. In the normal collapsed condition the cavity of the bladder combined with the canal of the urethra is represented by the letter Y, of which the two upper limbs represent the bladder and the lower limb the urethra. The Plate shows very well the displacement upwards of the lower limb of the Y, i.e., the urethral canal, with corresponding change of position of the anterior and posterior walls of the bladder represented by the other two limbs.

Dr James Ritchie thanked Dr Barbour Simpson for his clear description of this interesting case.

Professor Simpson remarked that it was seldom a case of irreducible displacement occurred.
MEETING IV.—February 8, 1905.

Sir HALLIDAY CREOM, Vice-President, in the Chair.

I. The following gentlemen were elected Ordinary Fellows of the Society:—A. A. Hall, M.B., Ch.B., The Union, Edinburgh; R. W. L. Wallace, M.B., Ch.B., Turriff, Aberdeenshire.

II. The President showed—(a) large fibro-cystic tumour removed by supra-vaginal hysterectomy; (b) fibroid tumour removed by myomectomy from patient æt. 24; (c) uterus removed by abdominal hysterectomy for cancer of the body; (d) large intestinal concretion, which simulated an ovarian tumour.

III. Dr J. W. Ballantyne showed an interesting specimen of twins. One of them was an anencephalic monster, with its cord and placenta. The second twin was in its amniotic sac and had been adherent to the single placenta. The mother, æt. 20, primipara, four months pregnant, had pains for 12 hours. On examination the first twin was found in the vagina, and, on removal, the second, in its bag of membranes with cord in the bag, was easily delivered. The placenta was expelled by compression, only one cord was found. It was a case of uniovular twins, with one chorion and two amniotic sacs. It had been sent to him for examination by Dr M'Callum, of Kendal.

IV. Dr Haultain showed—(a) an interesting uterus taken from an old woman of 71, who suffered from uterine haemorrhage. The uterus was of fairly normal size but the mucous membrane was congested and red, and throughout the wall one found arterio-sclerosis of the vessels. (b) A double uterus removed from a young woman of 20, who suffered from severe dysmenor-
EXHIBITION OF SPECIMENS.

rhæa so great that she could not perform her duties. The pain ultimately became constant. A swelling in the vaginal roof was taken for a distended tube or cystic ovary. Laparotomy showed a double uterus, a very adherent ovarian cyst, and a hæmatosalpinx. The right horn of the uterus was normal, and from it a single cervix projected into the vagina, but the left horn was rudimentary. The walls were thick, but the cavity did not communicate with the right horn. It resembled a Fallopian tube with very thick walls. Its cavity ran at right angles to that of the other uterus. The right uterus was congested, as if menstruation had taken place. Menstruation had evidently taken place in the rudimentary uterus, and the blood regurgitated into its associated tube.

V. Dr Haig Ferguson showed—(a) PAPILLOMATOUS OVARIAN TUMOUR, turned inside out to show papillomatous growths. Tumour removed intact. Tumour wall almost perforated in two places. Free fluid in peritoneum. No involvement of adjacent structures. Good recovery; no recurrence. (b) PAPILLOMA OF OVARY (under microscope). Patient 3t. 30; long history of pelvic pain and intolerable dysmenorrhœa. All sorts of treatment in Germany and elsewhere of no avail. Diagnosed tumour as probably a dermoid. Found it to be a papilloma. Most difficult to remove, as it burrowed deep down into left mesometrium. Difficult to make sure of absolutely complete removal in consequence. No ovary or trace of ovary to be discovered on right side after careful search. The patient specially desired other ovary to be removed, even if healthy, to cure dysmenorrhœa. Appendicitis found, with concretions and appendix removed. Patient has menstruated slightly twice since operation in November without a trace of pain. (c) UTERUS removed for cancer of cervix. Line of demarcation of cancerous mass well seen upon surface of uterus between healthy part of body and disease
below. (d) VESICAL CALCULI removed per urethram without an anaesthetic, from a patient with spinal paraplegia from vertebral disease. The largest calculus is 1 1/2 inches in diameter. General anaesthesia was contra-indicated, and cocaine locally was used quite successfully. It is interesting to see to what an extent the female urethra can be dilated. There was no subsequent incontinence. (e) DERMOID TUMOURS OF OVARY from the same patient. Both removed intact. Hair and teeth well seen. Hair black in one, very fair in the other. Bone no resemblance to colour of patient’s hair. He had had a considerable number of double dermoids in his operative experience. (f) EXTRA-UTERINE PREGNANCY (second month) removed before rupture. Hæmorrhage, however, had taken place into the peritoneal cavity from the ostium.

VI. Dr Fordyce showed—(a) SARCOMATOUS UTERUS removed by supra-vaginal hysterectomy; (b) DEGENERATING FIBROID TUMOUR removed by supra-vaginal hysterectomy; (c) UNUSUALLY LARGE OVARIAN TUMOUR.

VII. Dr Hellier showed a SUBMUCOUS MYOMA removed from a patient aged 50. It projected from the dilated cervix and occupied the upper part of the vagina. A subperitoneal myoma of considerable size was also present. Abdominal hysterectomy was done, as it would have been impossible to remove the whole by the vagina. The operation was not easy, as the tumour could not be pulled up, being broadest below. After securing the vessels, the very thin cervix was cut all round and then the tumour was withdrawn from the pelvis. The patient made a satisfactory recovery.
VIII. A CLINICAL AND PATHOLOGICAL ANALYSIS OF A SUCCESSIVE SERIES OF 120 ABDOMINAL HYSTERECTOMIES FOR FIBRO-MYOMATA.

By F. W. NICOL Haultain, M.D., F.R.C.P.Ed.

The operation of hysterectomy has now become one of such common everyday occurrence, that in itself it would be superfluous to attempt to engage the interest of the Fellows of the Society in its description. But in an aggregation of cases there is much of clinical and pathological importance, and it is specially from this aspect that I feel warranted in bringing before you a résumé of my experience.

I have performed the operation 120 times for the following symptoms:

Clinical Indications:

- Bleeding . . . . . 85
- Size . . . . . 15
- Pressure symptoms . . . . 13
- Reflex . . . . . 2
- Dysmenorrhea . . . . 3
- Constant pain . . . . 2

Age.—The ages of the patients were:

- Between 20 and 30 . . . . 2
- " 30 , 40 . . . . 28
- " 40 , 50 . . . . 80
- " 50 , 60 . . . . 8
- Over 60 . . . . . 2

In this connection the overwhelming majority of cases between 40 and 50 is instructive. Of the eight operated on between 50 and 60, only one had reached the climacteric, while those over 60 will be referred to later.
Hæmorrhage.—As is well known, and as the foregoing table amply corroborates, haemorrhage is the main symptom which calls for interference. Insidious in its commencement, it so slowly reduces the individual to a state of weakness, that only in a few extreme cases does the patient appreciate how far she is removed from health, and only after years of invalidism does she readily consent to operative treatment.

Far more readily do they seek relief from the presence of a large tumour, which only offends their susceptibilities without seriously injuring health. I have, for this reason, removed fifteen tumours, the majority (eleven), as might be expected, from spinsters. The largest, an oedematous growth, weighed 42 lbs.

Severe Pressure Symptoms.—Though frequently attaining large dimensions, these growths usually become readily accommodated, and symptoms from pressure are undoubtedly rare. This probably is accounted for by the fact that the majority of growths arise from the body of the uterus, which is freely movable, and thus permits of their ready access to the abdomen. It is mainly, therefore, when situated low in the uterus that symptoms of pelvic pressure are met with, or when, through a weak lower uterine segment, the uterus becomes retroflexed and the tumour incarcerated. The minor pressure symptom of frequency of micturition is common, but is of trivial importance.

In only five cases of growths from the body of the uterus have pressure symptoms been the sole cause of the patient seeking advice; three being due to retention of urine, one to cramp in the legs, and one to pressure on the ovaries prolapsed below the tumour.

The history of the retention of urine cases was similar throughout, a temporary stoppage before and sometimes during menstruation, due to the enlargement of the uterus and tumour at this time.
As might be expected, the cervical tumours were mainly associated with symptoms of intra-pelvic pressure.

Pain.—Severe dysmenorrhea, though frequently associated with bleeding fibroids, as a symptom, _per se_, I have only met with twice in this series; once with a cervical tumour, and once with an incarcerated growth in the posterior wall. Constant pain and tenderness of the tumour in uncomplicated cases I have not met with, although it formed the most marked symptom in two of the three cases complicated with pregnancy.

_Nervous Symptoms._—Reflex neuroses are uncommon. One case, however, is of special interest, as by the removal of a uterus, the seat of multiple fibroids, a cure was effected of a persistent laryngeal cough, so excessive as to produce violent Laryngismus Stridulus, of such an aggravated nature as to menace the life of the patient. In another instance persistent vomiting was similarly inhibited.

Unlike ovarian tumours, fibroids do not seem to influence the mental state of the individual to any marked extent; one does not, therefore, meet with the drawn, careworn expression so well known as the "Ovarian Facies."

_Sterilising Effect._—Perhaps it may not be out of place to give the statistics which appertain to child-bearing. Of the 120 cases, seventy-one were married, forty-two were absolutely sterile, and the remaining twenty-nine had an aggregate of seventy-eight children, which shows a general sterility of slightly over one child each. But still more striking is the fact that the average age of the youngest child before the patient came under treatment was 9 years, which is convincing proof, to my mind, of the sterilising effect of these growths, a question which is at present much debated.

The association of heart and kidney complications, of which so much has been made of by some writers, I have entirely failed to find. Beyond the necessary feebleness of the heart’s action due to prolonged anemia, I have met with
ABDOMINAL HYSTERECTOMY FOR FIBRO-MYOMATA,

no particular heart lesion which could be attributed to the presence of the tumour. While being impressed with the records of kidney complications, I at first carefully tested the urine in all my patients, but met with such negative results that I have completely abstained from continuing it as a routine practice.

It is, indeed, surprising when one considers the near relation of the ureters and their necessary displacement in many cases, how free patients remain from kidney affections, but, so far as I know, I cannot produce a single instance of this complication.

Beyond the mere recording of the symptoms as above, the clinical features call for no special remark, they merely corroborate what is already so well known, and may be shortly summarised as follows:—

1st. The main symptom of fibro-myomata is haemorrhage.
2nd. They markedly tend towards sterility.
3rd. Only exceptionally are they the cause of pain, severe pressure symptoms, or other complications.

Pathology.—It is from this aspect that a review of these cases is most interesting. They may be tabulated as follows:—

(1) Of Uterine Body.

A. Simple fibro-myomata . . . 63
   (a) Multiple . . . 54
   (b) Single . . . 9

B. Degenerated . . . . 20
   (a) Edematous . . . 12
   (b) Red degeneration or infarction . 1
   (c) Cystic . . . 2
   (d) Calcified . . . 1
   (e) Sarcomatous . . . 2
   (f) Telangiectatic . . . 1
   (g) Diffuse nodular fibrosis . . . 1
C. Complicated with other growths . 24
   (a) Adeno-carcinoma of body . 5
   (b) Mucous polypi . 9
   (c) Cystic ovarian tumours . 6
   (d) Solid ovarian . 1
   (e) Broad ligament cyst . 3

D. Complicated with pregnancy . 3

E. Complicated with marked ascites . 1

(2) Of Cervix . 7
   (a) Single . 6
   (b) Multiple . 1

(3) Of Body and Cervix combined . 2

As this table shows, the majority of the cases were multiple and simple. Sixty-two grew from the body of the uterus and seven from the cervix; of the latter, six were solitary and one multiple. In two cases there was a universal involvement of the whole of the uterine body and cervix.

The general and histological characteristics of these growths are too well known to warrant in an article of this nature any detailed description. The amount of connective tissue to muscle fibre varies within wide limits. The hard and slow growing are mainly fibrous, while the soft, rapidly growing have a larger proportion of muscle in their composition. Special reference, however, may be made to the primitive character of the blood-vessels throughout the tumour, which are more of the nature of sinuses; they thus necessarily tend to a sluggish circulation through the growth, readily influenced by the varying external conditions, and thus predispose to secondary degenerative changes, which are so common.

As the table shows, the most common change is the oedematous, which occurred in twelve cases; in ten of these it would appear as if the condition was due to a simple interference with the lymph return, resulting in a serous
infiltration of the tissue and a slow secondary degenerative change in the fibres, as evidenced by destruction of their nuclei and granular changes in the cell protoplasm. This, as is natural to expect, occurs in multiple as well as in solitary growths; while the degenerative process may be confined to isolated portions of the tumour, with intervening patches of healthy tissue.

In the early stages the cut surface of the tumour has a softened appearance, and there exudes a clear yellowish non-coagulable fluid; in the later stages degenerated areas are found in all degrees of dissolution, culminating in degeneration cysts with thick coaguble contents. Microscopically, throughout the tumour will be found blood-extravasations showing congestion from slight impairment of the venous return. These advanced changes are more frequently met with in the stalked subserous varieties of tumour, and are probably due to the interference with the circulation in the pedicle. The most marked case in my experience was met with where the pedicle was partially twisted. In two solitary growths, however, the changes were so marked and the appearances so different that it is questionable if one had not to deal with a different variety of growth de novo.

These tumours in their general features closely simulated the growths described first by Lawson Tait as oedematous fibroids; like Tait's cases also, they occurred in young women (26 and 28 respectively), and were solitary and interstitial in position.

To the naked eye the tumour showed on section a spongy appearance, with numerous small, well-defined cysts. Microscopically, the degenerating fibro-myomatous matrix was here and there infiltrated with numerous small cells of almost embryonic appearance. No cellular lining could be identified on the larger cysts, but occasional endothelial lined spaces could be seen. Some portions markedly simulated myxo-sarcomatous
change, but it is improbable that they were really malignant, for after removal there has been no evidence of such. I have little doubt that the original tumour which gave rise to the unilocular fibro-cyst was probably of the same character. This growth was met with in a young woman of 31, who suffered from constant uterine haemorrhage and consequent severe anaemia. The contents of the cyst were amber-coloured and spontaneously coagulable.

Closely allied to the oedematous is the red degeneration, or so-called necrobiotic tumour, which on section shows a dark purplish appearance. On microscopic examination the muscular and fibrous tissue fibres are seen markedly degenerated and stained by haematin, similar to red infarction met with in the spleen and kidney. This is probably due to a primary slow interference with the venous return resulting in stasis. Most examples of this change have been found in fibro-myomata - connected with pregnancy, which is natural to expect from the increased vascularity resulting from gravidity. These tumours rapidly increase in size, and are said by Fairbairn to be associated with tenderness; though probably from the increased tension, this symptom was not present in the case I met with, nor was it so in a very marked example of Dr Fordyce’s, which he kindly allowed me to investigate.

The calcified tumour I removed from a lady of 69, on account of pressure symptoms, from pelvic impaction. The uterus which formed the pedicle was little thicker than an ordinary pencil.

I have already published an account of the sarcomatous tumours removed from patients of 59 and 71 years of age. As I then stated, the history of the cases and microscopic characters of the growths gave convincing proof of their origin from pre-existing fibroids.

The most peculiar of all the growths I have removed is perhaps that which I have designated “Diffuse Nodular
ABDOMINAL HYSTERECTOMY FOR FIBRO-MYOMATA,

Fibrosis. In this instance, as may be seen from the specimen, the uterus was uniformly enlarged to the size of a six months' pregnancy. On section the cavity of the uterus was seen to maintain its triangular shape. The uterine walls were enormously thickened by innumerable small, white, hard unencapsulated nodules, many of which protruded into the uterine cavity in polypoidal form, but were enclosed by a definite uniform layer of uterine muscle externally, which preserved the smooth regular contour of the uterus as a whole. Microscopically the nodules were mainly composed of white fibrous tissue with a few muscle fibres. I cannot in the literature find any description of a similar case.

The patient suffered from profuse uterine haemorrhage only.

Interstitial Cervical Fibro-myomata.—I have met with seven examples of this variety of growth, a proportion which quite coincides with the general statistics regarding these tumours, viz., 6 per cent. Two were situated in the anterior wall and five in the posterior; all of these but one in the anterior wall were uninodular. They are of great interest, and I may therefore be permitted to dilate somewhat more specially upon them.

The largest weighed 6½ lbs., but all were big enough to fill the superior strait of the true pelvis, and thus give rise to pressure symptoms; they assumed at the same time the characteristic ovoid shape due to compression by the pelvic walls.

In five the entire wall of the cervix was uniformly involved (supra-vaginal, inter-vaginal, and intra-vaginal portions), and the cervical canal was thus much dilated transversely; while the opposite wall was much attenuated by being stretched over the growth. The os externum was therefore represented by a wide transverse opening which easily admitted one or two fingers.
The body of the uterus remained unaffected, and was evident as a nodule on the top of the tumour. In two instances, it was the seat of a small fibroid.

The bladder in each case was lifted up into the abdomen by the tumour itself when anterior, and by the stretching of the anterior wall in the posterior growths.

In one instance the displacement of the body was very pronounced (see diag.); here it was only found after complete liberation of the growth, retroflexed in the pouch of Douglas. In this instance the operation was complicated by the absence of the usual landmarks, on account of the entire pelvic inlet being filled with the incarcerated tumour, which effectually prevented the detection of the uterus and ovaries implanted beneath it. The bladder also was found pressed against the side wall of the pelvis, and was much enlarged from long previous distension.

**Supra- and Inter-vaginal Cervical Fibroid.**—This growth in the posterior wall differed from the preceding, so far as physical signs were concerned, in the absence of dilatation of the os externum; as would be expected from the want of involvement of the intra-vaginal portion. The symptoms were simply those of pressure without haemorrhage. The removal of all these cervical growths is tedious and difficult. Firstly, from their deep situation in the pelvis; and secondly, from the displacement of the surrounding structures, particularly the ureters.

Their close and intimate connection with the rectum, if growing from the posterior wall, is a cause of difficulty; at the operation, and danger subsequently, as there is a tendency to infection of the raw bed of the tumour by the bacillus coli, which in one of my cases caused the death of the patient.

To as far as possible mitigate this danger, I now have the rectum thoroughly washed out daily by enemata for several days after the operation.
Subserous Supra-vaginal Cervical Fibroid.—This tumour I
removed by supra-vaginal hysterectomy, as after enucleation of
the growth from the recto-vaginal septum I was able to secure
a good cervical pedicle.

This patient suffered from severe rectal symptoms, con-
stipation alternating with diarrhoea, also severe tenesmus and
occasional attacks of retention of urine. The uterine canal,
though increased in length, was not stretched transversely as
in the former tumours. The intra-vaginal cervix was well
marked and appeared normal, while the posterior vaginal wall
was bulged forward by the growth. After removal there was
considerable suppuration of the bed of the tumour, due to infec-
tion of the bacillus coli through the rectum. Evacuation of the
pus, however, fortunately spontaneously occurred through the
patent cervical canal.

Uniform Enlargement of Body and Cervix.—Of this combined
variety I have had but two cases, and so far as my experience goes,
they form their most formidable type from the surgeon’s aspect,
from their unwieldiness, due to size and pelvic incarceration.

In one, the lower pole of the growth was sloughing and
gangrenous, and the patient died three days after the operation
from septic peritonitis.

Complicated.—The frequency of the association of fibro-
myomata with other pelvic and uterine new growths is interest-
ing and instructive.

That ovarian cystic tumours are not more frequent is some-
what surprising, when one considers how often cystic ovarian
changes are met with in fibro-myomata.

The presence of mucous adenomata in nine cases is what
might be expected from the increased vascularity of the
organs; and in the same way adenocarcinoma, with fibroids,
is of importance clinically, in so far as it may account for a
rapid development of serious haemorrhage in a case previously
quiescent.
Further, the knowledge of the comparative frequency of adeno-carcinoma makes it imperative that before performing subtotal hysterectomy for bleeding fibroids; the cavity of the removed uterus should be laid open and thoroughly inspected, when, if malignancy is found, the cervix should be excised.

In one of my cases I omitted to follow this rule, and did not recognise the condition till some weeks later. No development, however, of the malignancy has subsequently occurred, though the operation was performed over three years ago.

In one case only have I met with marked ascites, a coincidence so common with simple fibrous ovarian tumours. This is probably accounted for by the uterine tumours being extraperitoneal.

The association of pregnancy with fibroids has been the indication for hysterectomy in three cases; in one case at the third month, in the others at the fourth month. The reason for thus operating was in two cases severe continuous pain and pressure symptoms; in the third case I did so to complete the operation commenced by another surgeon, who was under the impression he was dealing with an ectopic gestation. It would be out of place in this paper to deal with the treatment of fibroids and pregnancy generally. But it seems to me that unless urgent symptoms manifest themselves pregnancy should, in the majority of cases, be allowed to continue, but if interference becomes necessary, hysterectomy is preferable to the induction of abortion.

In the latter, not only have we the immediate dangers due to haemorrhage and imperfect expulsion, but the remote complications due to degenerative changes in the growths, and the possible recurrence of the pregnancy.

The Operation.—The method of operation I prefer is the subtotal or supra-vaginal method, and I consequently perform it in all cases where there is no special indication for the "pan" operation—such as cervical involvement or associated malig-
nancy. I have thus adopted the subtotal operation in 105 cases, as against 15 pan-hysterectomies.

I have been led to this decision almost entirely on account of the fact that it is simpler to perform, which of necessity infers that it is quicker and thus safer; as from considerable experience in abdominal surgery I am more and more convinced that rapidity of operation (in conjunction, I need hardly say, with thoroughness) is of great value, and if the same end can be obtained I infinitely prefer the shorter method.

It has been claimed by the supporters of the pan operation that the possible chance of a subsequent malignant cervix is removed. This must be admitted, but as I have already shown in a previous paper read to this Society, the chances of such a contingency are so infinitesimal that they are almost unworthy of consideration. It has also been stated that there is a greater liability to secondary intestinal obstruction from adhesion to the peritoneal cicatrix in the subtotal method. My experience on this point is, I am glad to say, nil, but at the same time I cannot imagine that a peritoneal cicatrix can have any more tendency to attract and fix intestines because it happens to have a stump of cervix behind it.

It would be superfluous to describe the general steps of the operation to a meeting of this Society. However, a few important details acquired by experience might be mentioned. After trying all modes of securing the vessels, I have come to the conclusion that the most rapid and effective way is to clamp with forceps, and after removal of the tumour, tie them. By this means they are more securely ligatured and no time is wasted by reinforcing sutures.

The cervical stump I leave as it is cut; the formation of flaps I consider not only superfluous but harmful, as I believe that the patent cervical canal may form a ready drain should any suppuration occur in the subperitoneal tissues from which
the tumour may have been enucleated, as shown in one of my cases already described.

The layers of the broad ligament I appose by means of a continuous silk suture; and I am careful to invert the edges as in Lembert fashion.

This may account perhaps for the absence of intestinal obstruction from adhesion to the cicatrix.

I have closely followed the popular lines as regards details in technique, with two exceptions—viz., the use of sponges, and suturing the abdominal wound. I prefer sponges to swabs for many reasons. They are softer and kindlier to the peritoneum. They have more resistance in shutting off the bowels in the abdominal cavity, and they are much more absorbent. By this means the peritoneal toilet can be more quickly performed and with less irritation to the delicate peritoneum. And lastly, they are more readily counted.

That they are more likely to be the source of sepsis I emphatically deny. Out of many hundred laparotomies in which I have used them, I cannot recall one instance in which sponges have infected the patient. By suitable methods they can be rendered as sterile as any swab.

The following is the method I employ:—

New sponges are laid between towels and beaten to thoroughly break up cretaceous matter. They are then soaked for 24 hours in a solution of carbonate of soda—½ lb. to the quart—after which they are rinsed until no sand is deposited. They are then kept permanently in jars in a solution of 1-60 carbolic until required. Before operation they are put in a solution of carbolic 1-20 over night, and immediately before use they are squeezed from this and placed into hot sterile water. During the operation the following rules are attended to:—

After being soiled they are thoroughly rinsed in cold and tepid sterile water consecutively, and lastly are returned to the
hot sterile water ready for use. After the operation they are thoroughly rinsed then soaked in the soda solution for 24 hours. Again rinsed thoroughly and returned to the carbolic solution 1-20.

One set of sponges may, if care be taken, suffice for at least thirty operations. They should be squeezed, not wrung, as by this means they are prevented from being torn and ragged, and any chance of leaving small torn pieces in the abdomen is thus avoided.

In stitching the abdominal wound I use the through-and-through method, using silk-worm gut as the suture material. So far as I know, the cicatrix has proved as firm as that by the other more elaborate methods. Other things being equal, therefore, I again prefer the simpler and more rapid.

The prevention of hernia, I believe, is mainly to be acquired by the patient steadily wearing a well-fitting abdominal belt for at least a year after the operation. By following this rule, experience leads me to believe that the through-and-through suture does all that can be desired.

The removal of the ovaries along with the uterus must depend on their situation and freedom from disease. In many cases it would materially complicate the operation to save them, and very frequently they appear so pathologically changed that one hesitates to leave them. The age of the patient must also have some guiding influence. When over 40 years of age their removal does not seem to incur such distressing climacteric symptoms, as they do not require so much consideration. In one of my cases in which they were left, the patient died of sarcoma of the ovary four months after the operation.

The post-operative treatment I follow is of the simplest. The patient is allowed and encouraged to lie in whatever position she may feel most comfortable. The continued dorsal position to many is so intolerable that its enforcement is need-
lessly harsh, as no good purpose can be served by doing so. After chloroform-sickness stops, tea, soups, and other liquid nourishment can be freely partaken of. The bowels are moved on the morning of the third day, after which ordinary plain diet is allowed, according to fancy. The starvation of the patient from all food and drink for the first forty-eight hours, and the subsequent existence for weeks on slops, like the enforced maintenance of the dorsal position, may happily now be looked upon as a relic of the past—the nature of barbarism. The first movement of the bowels after the operation should be gentle. Calomel, the favourite aperient in these cases, I find is often too severe, and should not be given to elderly or weak women.

For the first forty-eight hours the urine is drawn off, after which it should be passed voluntarily if possible. Sometimes, however, there is great difficulty in emptying the bladder for many days, as might be expected from the liberties which have been taken with its attachment to the uterus.

To enter into the details of the management of minor complications, though important, would be wearisome, and does not come under the scope of this article. I may say, however, that careful and intelligent nursing has done as much towards the success of the operation as the improved technique of the operator. Asepsis and improved methods have done much to make hysterectomy a safe operation, but the knowledge of details in the after-treatment forms the finishing touch which has reduced the mortality to the vanishing point.

I have unfortunately to record three fatal terminations:—One after the supra-vaginal method had been employed, and two after the pan operation. The former occurred in a patient reduced to the extremes of bloodlessness, who never rallied from the effects of the operation. The latter, I regret to say, were due to septic infection. This, in one instance, was the
result of infection of the bed of the tumour by the bacillus coli, through the bared rectum, from which the large posterior cervical fibroid was separated. The other case I have incidentally already mentioned as due to peritoneal infection from a sloughing growth involving both cervix and body.

To attempt to draw any conclusions as to the relative risks of the two methods from my experience would be absurd, as beyond twice, when I did the pan operation merely to acquaint myself with its technique, all the cases were complicated and difficult.

Indications for Hysterectomy.—Before concluding, it might perhaps be well to dwell shortly on the lines which have guided, and the conditions which have influenced, me in performing the above series of operations; or, in other words, discuss the indications for hysterectomy.

In considering this important question, three factors have stood prominent.

Firstly, the operation:

Is it sufficiently safe to warrant its adoption except from the direst necessity?

Are there any alternative methods of treatment of equal value?

Are the remote results satisfactory?

Secondly, as regards the effects of fibro-myomata:

Are they sufficiently detrimental to the well-being of the individual to warrant such radical treatment?

The risk to life from the operation in competent hands has, in the last decade, been reduced to such small proportions as to give rise to little anxiety. Doubtless I have in my 120 cases to record three deaths, but in each and all the condition of the patients was so perilous, that anything short of hysterectomy could not have spared these lives beyond a few months; and in one case, had the operation not been delayed so long, the result would probably have been otherwise.
The alternative methods of treatment are so uncertain that it is questionable if, in the face of the certainty from hysterectomy, they are worthy of adoption.

Removal of the ovaries has practically the same risk as the major operations, which, with its uncertainty, makes it, except in very exceptional circumstances, unworthy of consideration.

Electric Treatment, though doubtless of value in many instances, is also uncertain, and, at the same time, irksome. It has undoubtedly had its day, when hysterectomy was fraught with a large mortality, and can be looked back on with respect, but under existing conditions it may be said it has been entirely superseded.

Medicinal Treatment is seldom curative, and only occasionally even temporarily beneficial.

The results of hysterectomy are perhaps the most happy of gynaecological surgery. With judicious conservation of the ovaries the after-effects of the operation are all that can be desired; and if symptoms are present which justify curative treatment, in the majority of cases it stands pre-eminently first as the method of selection. In some cases of pedunculated tumours and solitary tumours myomectomy is perhaps preferable as a conservative operation, but these are few and far between, and cannot be reckoned as an alternative method of treatment in most instances. In this connection, however, it is well to impress the fact that in cases of severe bleeding from small tumours, the cavity of the uterus should always be explored by the finger prior to laparotomy being performed, so as to exclude the chance of a stalked submucous growth being the sole cause of the symptom.

Much has been written and more has been said regarding the miserable condition of the “so-called” victims of hysterectomy. They are described as not only losing their sexual functions, but actually developing masculine attributes, such as a moustache or a deep, sonorous voice. Still further, it is said
that their mental equilibrium is apt to be rendered unstable; but this, I trust, we surely cannot consider a further simulation of the male. Fortunately, my experience leads me to give such assertions a flat denial. It is probable that after this operation some women have accidentally become insane, and the mole-hill has thus become developed into a mountain. Yet there can be little doubt this canard has seriously prejudiced the popular mind, and ought to be strenuously controverted.

In this connection I have made strict inquiry from a number of medical superintendents of private and other asylums. So far, I have succeeded in unearthing one solitary inmate who, in their experience, had no uterus. In comparison with the so-called mutilation, there are scores without breasts and appendices, and so far as I know from the psychical aspect, there has been no cavil at their removal. Surely the subject bears looking into by the anti-operator. From the other aspect, the fact that numbers of asylum inmates suffer from fibroids might with more weight be urged as another indication for their removal.

Experience teaches me that, almost without exception, the return to health, both bodily and mental, after operation, is perhaps the most encouraging indication for its adoption. The happiness of the individual upon restoration to health, after so many years of comparatively unknown fitness, is indeed striking.

From a clinical aspect, hysterectomy is only to be considered when fibro-myomata give rise to well-marked symptoms, and when the age of the patient is such that there can be no reasonable expectations of a cure from natural causes within a reasonable time.

To operate simply on account of the presence of a fibromyomatous growth is absolutely reprehensible. But, on the other hand, to condemn a woman to years of invalidism, waiting on the menopause, is infinitely more so, as by this means the
best years of her life are wasted on the only probable chance of 
a comfortable old age.

In this connection it is well to remember that from the 
insidious and slow manner by which the patient is reduced to 
a state of inutility, she is unaware of her inefficiency and weak-
ness, and is but too ready to exist instead of live, and this at 
the expense of the friends immediately associated with her. 
She knows not what it is to live in health and happiness, but 
drags through an undesirable existence in the fond hope that 
when she is old she will be stronger. To aid and abet in such 
an existence is unworthy of our profession, when a ready and 
safe means for its avoidance is at disposal. On this account 
I urge women, when invalided by haemorrhage and weakness, to 
consent to the small risk which the operation entails, that 
they may become able to worthily fill their places in their 
respective spheres.

It is the absence of pain which predisposes more that any-
thing to the postponement of the operation from the patient’s 
standpoint, as proved by the readiness with which they agree, 
nay, even personally urge similarly severe operative procedures, 
when the appendages are diseased. Yet, I am prepared to say, 
they are no more social and physical wrecks in the latter case 
than the former.

In spite of the fact that there is so little danger to life, it is 
pitiable to think that many women of early middle life are 
encouraged to exist in a state of semi-invalidism—the result 
of bleeding—simply in the hope that probably when their best 
years are past they may be relieved of their suffering, and this 
simply to avoid undergoing the risk of an operation with such a 
small mortality. In this there is little doubt sentiment plays 
a considerable part. The mythical idea of being unsexed by 
the operation is strong but erroneous. In the working class 
and the poor, necessity demands otherwise, but among the 
more affluent classes it is different. Fashionable spas are
flooded with them, and the bath-chair "chauffeur" reaps a large harvest.

Now that surgical methods are so perfected as to reduce the risk of radical operation to the vanishing point, I feel one is warranted in taking a strong position against long-continued temporising treatment; and if a woman's health and happiness are impaired by reason of a uterine fibro-myoma, to urge strongly its removal. To suggest resting so many hours daily and lying in bed during each menstrual period for a space of many years—a method of treatment (if such it can be named) I have too commonly seen—is to my mind puerile at the best.

To sum up, I believe that hysterectomy is indicated in the majority of interstitial and subperitoneal fibroids, which give rise to symptoms, and reduce a woman's health, comfort, and usefulness when under forty-five years of age.

In all cases where urgent symptoms are present at any age when myomectomy cannot readily be performed.

That when no symptoms are present no treatment is necessary, and it is unwise to acquaint the patient that the condition exists.

I may have stated my ideas strongly, but I feel convinced if they were more frequently followed, there would be many a cleaner hearth and happier home than at present exists.

Sir Halliday Croom thanked Dr Haultain in the name of the Society for bringing his most charming and interesting paper before them. They knew that Dr Haultain stood at the very forefront as an operator, and his experience was of the utmost value.

Dr. Haig Ferguson said that Dr Haultain had so fully expressed all the views in regard to the treatment of fibroid tumours that it was superfluous to add anything else. He congratulated him most heartily on his paper.
Dr Munro Kerr joined with the others in congratulating Dr Haultain on his brilliant results. He had come from Glasgow to hear the paper, and had derived great pleasure and instruction from it. They should be very grateful to Dr Haultain for bringing forward all those cases and for establishing such brilliant results in the operation of abdominal hysterectomy. It encouraged those who were engaged in gynaecology to lay the operation before their patients as being safe and successful. In his own experience he had done the operation of hysterectomy for fibroids on twenty occasions and had had no fatal result in these cases. He looked upon it as an operation that should have a very small mortality. In his experience it had even a smaller mortality than ovariectomy. Hysterectomy was often extremely difficult, especially in cervical fibroids, but they did not get so often those septic conditions associated with ovarian tumour, especially in cases of abscess of the ovary. He endorsed all Dr Haultain said in support of the operation, for he did think it was puerile to condemn a patient to invalidism by attempting to relieve the symptoms by drugs and electricity. He again thanked Dr Haultain for his interesting paper.

Dr J. W. Ballantyne said he came there to learn a good deal from Dr Haultain's experience, and had learned even more than he expected. He had been impressed by the remarks as to the rapidity of the operation. In this respect they had been going through a phase in regard to hysterectomy as they had long ago with ovariectomy. That was a point of great importance, and he was much struck with it. He was also impressed with the fact that Dr Haultain preferred the "through-and-through method" of suture, and with rehabilitation of the sponge. Dr Haultain did not mention axial torsion of the uterus, in which the twisted uterus formed the pedicle of the tumour. That condition must be regarded as rare, since Dr Haultain had not met with it.
Dr Hellier had listened with extreme interest to the paper, and was especially struck with the admirable record of only three deaths in 120 cases. He could not but think that Dr Haultain had been specially fortunate in his series, for unforeseen and unavoidable accidents are apt to spoil the results of the most careful operator. At the same time Dr Haultain's operative skill was undoubted. He always tested the urine in every operative case. Albuminuria was often due to pressure, but it might be due to granular kidneys. Another indication for operation in fibroids was disease of the appendages, which are often diseased in cases of myoma. Did Dr Haultain favour the high pelvic position? He had not used sponges for several years and had not used through-and-through sutures for ten years, and felt inclined to adhere to methods which had served him so well. He could agree with what Dr Haultain said about the effect of the operation on the patients. Their recovery and permanent enjoyment of health were most striking. No operation gives better results than hysterectomy for myoma. He referred to the occasional occurrence of acute dilatation of the stomach after abdominal section, and mentioned a case in which washing out the stomach had rescued the patient from a most painful and critical condition after hysterectomy. He thanked Dr Haultain for his paper very heartily.

Dr Ritchie said Dr Haultain had given a most able and well-reasoned statement of indications for the operation, and they would be found most useful. It had given him great pleasure to listen to the paper.

Dr Lackie said that, with reference to the clinical indications for operation, he had a patient suffering from chronic rheumatoid arthritis, and also a large fibroid tumour which gave rise to few symptoms. A physician had informed him that secretion from the fibroid tumour might cause the arthritis, and recommended removal of the tumour. He thanked Dr Haultain for his paper.
Dr Campbell asked Dr Haultain if he would give his opinion as to the value of double oophorectomy in cases of uterine fibroids. A recent writer in the Journal of Obstetrics and Gynaecology insisted that there still was a class of case in which this operation was indicated. As to after-effects of hysterectomy there was a valuable paper in which the after-history of ninety-five cases from the Chelsea Hospital had been traced. Of the ninety-five no fewer than ninety were found to be well and strong enough for work. Though two of the remaining five had found their way to asylums, there was no evidence to show that this was in any way due to the hysterectomy.

Dr Haultain thanked the Fellows for the kind way they had received the paper and for the manner in which they had discussed it. He agreed with Dr Munro Kerr that hysterectomy was safer than ovariotomy. In the latter the patients suffered more after the operation. Hysterectomy cases were much better, and the results were equally good. This was because they did not interfere with the ovarian nerves. He had given up removal of the ovaries for fibroids, as it was a much more risky operation and was extremely painful for 24 hours after; unless the patient was thoroughly under the influence of morphia, she suffered great pain; and furthermore, the effect of the operation was uncertain, only curing about 90 per cent. of cases. He did not think it should have a prominent place except under exceptional circumstances. After hysterectomy there was practically no pain, as Dr Hellier said. He had been most fortunate in his cases, and must own to luck; cases sometimes went wrong from the most outside causes, and it seemed hard to count them fatalities; he had fortunately not suffered in this way, hence his good results. He always used the Trendelenburg position; it had been the means of revolutionising hysterectomy. The high pelvic position and the large retractor have been most useful. Sponges were old friends, and he would keep to them as long as they suited him. They
were fairly cheap: twelve sponges, lasting thirty operations, cost 35s.; about 1s. 3d. per operation. As to after-treatment, the patient got nothing till sickness passed off. Then sips of cold water were given for thirst, and gruel and beef-tea allowed the same afternoon. Meat-juice and milk might be given at intervals. On the third day the bowels were moved, and fish and chicken allowed: On fifth day ordinary diet was given. He had met with one case of distension of the stomach after chloroform, which was cured by washing out. In the cervix he never made flaps, but put in a few stitches at the sides and left the cervical canal patent, because it formed an excellent drain. He caught the uterine artery with forceps as it turned upwards, and so avoided grasping the ureter. Dr Lackie's case was perhaps analogous to malacosteum, where removal of the ovaries was beneficial. He did not believe that removal of the ovaries tended to cause mental weakness, as he investigated the question thoroughly and had only found one case. He took the opportunity of refuting such statements. He again thanked the Fellows very much for their attention.

Meeting V.—March 8, 1905.

Dr N. T. Brewis, President, in the Chair.

I. Professor Simpson showed—(a) Two cases of cervical carcinoma. In the first case the whole uterus was removed by abdominal pan-hysterectomy. Patient was 62, had had five children, and suffered from free bleeding. The case had been subjected to a preliminary treatment with Doyen's serum. The injections loosened and slackened the disease tissues, and made the uterus more easy of removal. The second patient was 33; had had six children. There was profuse hemorrhage. In this case there was more extensive mischief,
EXHIBITION OF SPECIMENS.

the cervix being more completely invaded and the body involved. The uterus was removed by the vaginal method, and, so far, the patient had made a good recovery. One ovary, being cystic, was removed. During operation an opening was made into the bladder, which still leaked. This would be closed afterwards after cicatrisation was complete. This case had also been dealt with by means of Doyen's serum. It distinctly loosened the growth all round. (b) OVARIAN TUMOUR from patient of 72; recovery. This was an interesting case of hereditary ovarian disease which would be discussed in the communication. (c) FIBRO-CYSTIC CERVICAL TUMOUR WITH OVARIAN CYSTOMA. Here the diagnosis was extremely difficult. By the abdomen was found an irregular tumour, cystic at some points, and like an ovarian cyst, having irregularities and growing down into the broad ligament. Through the vagina also it had a cystic feel, and came down to the level of the os externum uteri. On opening the abdomen the right cystically degenerated ovary was found on the top of a uterine tumour, and adhering to it. This was first separated, and then the entire uterus was removed. On incising the growth, which had developed in the back of the cervix, a central cavity was found, filled with fluid which congealed immediately after removal. This was an interesting case of fibro-cystic tumour growing from the cervix. The left ovary was small and indurated, and formed a knot on the back of the uterus. (d) FIBROID TUMOUR WITH DISEASED OVARY. This specimen showed a fibroid growing from the back wall of the organ. Both ovaries were cystic. The tumour was removed by pan-hysterectomy. (e) SUBPERITONEAL FIBROID OF THE UTERUS SIMULATING CARCINOMA OF THE OVARY. This case was diagnosed as a uterus with a diseased ovary beside it. Ascites was present. The condition was thought to be scirrhus of the ovary, because of the nodular feeling about the uterus. On operation, the ovaries were found healthy and left behind. (f) A FIBROID
TUMOUR OF THE UTERUS which came close down on the cervix, but grew more to the right into the broad ligament. After removal, on passing a sound one found the cavity of the uterus very tortuous, the sound going four inches in one direction, then two inches in another, and still another inch in a third direction. No valuable information could be got by the sound in such a case. The tortuosity was caused by different tumours in the wall of the uterus. One ovary was removed, and showed evidence of recent menstruation; the other had a few distended follicles, but was left behind, the patient being only 30. (g) PECULIAR CONFORMATION OF UMBILICAL CORD. This cord was sent to him by Dr Goldstein. A peculiar sac grew from it towards the placental extremity. It was filled with grumous fluid, and had no relation to the placenta. The cord had only two vessels, and at the point where the sac hung from it it divided into two, one vessel being in each part. The cords joined again before reaching the placenta. (h) SHORT CORD WITH VELAMENTOUS INSERTION. The cord was only three inches long, but reached the membranes a long way from the placental margin. That was a case of velamentous insertion.

II. Dr Haultain showed—(a) AN ANENCEPHALIC FOETUS WITH EXOMPHALOS. The skull vault was absent, and the brain and membranes protruded as a hernial mass. The liver, intestines, etc., were outside the abdomen. There was a curious deformity of the fingers and toes, and a nodular condition of the penis. (b) EPITHELIOMA OF THE GLANS CLITORIDIS, removed from a patient of 59. This was a case of squamous epithelioma, showing numerous typical cell-nests under the microscope. It was a slow-growing tumour, having been present for two years. (c) INFARCTION OF THE OVARY undergoing organisation. This was removed from a girl of 19. There was no pain, but she suffered from continuous
EXHIBITION OF SPECIMENS.

uterine hæmorrhage for eighteen months, which had reduced her to extreme anæmia. The tumour was chiefly organised blood-clot, with a small amount of ovarian stroma at the periphery. On section it closely resembled the spleen as regards size and shape.

III. Dr Haig Ferguson showed—(a) LARGE FIBROID, involving cervix as well as slightly the body of uterus, removed by pan-hysterectomy. It protruded into the vagina and pressed on the rectum, and even came down to the perineum between the rectum and vagina; above, it reached almost to the ensiform cartilage. The right ovary was squeezed and flattened out like a wafer between the tumour and the abdominal wall. The other ovary was cystic, and was likewise removed. Pan-hysterectomy was done, and the large raw surface left after enucleating the tumour from between the layers of the broad ligament was well drained by the vagina. The patient's temperature never exceeded 99 during the entire course of the convalescence. A cervical fibroid of this size (weighing little short of 14 lbs.) was a rare condition. (b) A COLOURED DRAWING of a specimen from a patient aged 32, where a vesico-vaginal fistula was closed by turning the cervix uteri into the bladder, and where the menses were discharged per urethram for nine years. The cervix was turned into the bladder and acted like a cork, the vagina being sewn all round it. This healed up, and the patient was well for two years. There was no leakage, and she menstruated through the bladder. The menses caused irritation, and the bladder was washed out daily, but, in spite of all, calculi began to form around the cervix and around clots of blood. Large numbers of calculi were removed twice a year, and the irritation from these resulted in the formation of small urethral and vaginal fistula. This went on for nine years. The anxiety was a septic bladder communicating directly
with the uterus and the kidneys, and extension to these organs was feared. Both these conditions occurred, and she died from a left suppurative salpingitis. There was also an abscess of the right kidney.

IV. Dr Fordyce showed a uterus with a large submucous fibroid, from a patient of 60, who suffered from severe haemorrhage and was exsanguine. Hysterectomy was done, and she was doing well.

V. Dr Oliphant Nicholson showed a specimen of missed abortion.

VI. CASE OF ECLAMPSIA IN WHICH LUMBAR PUNCTURE WAS PERFORMED.

By J. W. Ballantyne, M.D., F.R.C.P.E., Lecturer on Midwifery and Diseases of Women, Medical College for Women, Edinburgh; Physician to the Royal Maternity Hospital, Edinburgh, etc.

Eclampsia is so serious a complication of pregnancy and labour that the obstetrician, discouraged by the frequent failure of the ordinary methods of treatment, is willing to give a trial at least to any new plan of management that holds out a hope of better results. So in the past few years we have heard much of Bossi’s dilator, of thyroid extract, and of saline infusions, and a little of decapsulation of the kidney and of lumbar puncture. It will not, I suppose, be denied that the giving of saline infusions, the employment of Bossi’s dilator, and the administration of thyroid extract or of iodide of potassium have all in a certain degree tended to diminish the risks of eclampsia gravidarum. Neither, however, can it be denied that they may all fail, even when combined with the best of the older methods, and when
given by skilled hands under the control of alert and per-
cipient minds. When, therefore, I found myself, last October, in
the presence of a case of eclampsia of so severe a type that it had resisted treatment by saline infusions, morphia, and acetate of potash, as well as by careful dieting and the use of purgatives, sedatives, etc., I felt at liberty to try the effect of lumbar puncture. The post-mortem examination—for the patient ultimately died—showed that it was hardly the most suitable kind of case for this plan of treatment, in view of the advanced character of the lesions found in the kidneys; but, at the time, I chose lumbar puncture rather with the intention of checking the fits than with that of benefiting the renal morbid state. The patient was under our care in the Maternity Hospital for ten days, and a complete record of her symptoms, signs, progress, and treatment was made; but I shall here content myself with setting forth the salient features of the case.

Mrs B., aged 25, a i.-para, was sent into the Maternity Hospital by Dr Graham of Currie, on 7th October 1904, with the following history. She was about the sixth month of her first pregnancy. She had had more than the usual amount of sickness during pregnancy, but had been otherwise well. On 5th October she did a heavy day's washing, and on the following day she was seized with severe and constant pain in the loins; she vomited, and suffered from a bad headache. It was noticed also that her face was puffy, especially under the eyes; she passed on this day very little water, and what there was had a red colour. She became dull and drowsy, and at 6 P.M. on 6th October she had her first fit, evidently eclamptic in nature, from the description given to Dr Graham by her friends. During the night she had seven other fits, increasing in severity; the last one occurred at 10 A.M. on 7th October, as she was being lifted into the ambulance. Dr Graham had seen her during the
night, had given a sedative, and had arranged for her removal into the Maternity Hospital. There was marked constipation, and she was very drowsy between the fits. Her previous health was said to have been good; but there was no precise information, for Dr Graham had not attended her before the present occasion.

On her admission to the Hospital, it was noticed that she was a well-developed woman, that her face showed general pallor with some puffiness under the eyes, and that there was no oedema of the body or limbs. She was not quite unconscious, for she resented being interfered with. Her pupils were moderately contracted; her tongue was swollen and badly lacerated; and her mouth was in a bad state, the breath being very foul. The temperature was 101; the pulse was 104, and of high tension.

The fundus uteri was situated about the level of the umbilicus, and the organ could be felt contracting at intervals of about five minutes. Fetal heart sounds could not be distinctly heard, and the fetal parts could not be easily located. The cervix uteri was not taken up, but the os was slightly dilated, admitting one finger. There was a small bag of membranes; the head was presenting. The bowels were much loaded. Two ounces of urine were obtained by catheter; it contained granular and hyaline casts and blood corpuscles; it had 2·6 grs. of albumen to the oz., and 4 grs. of urea to the oz.

Obviously this was a grave case of eclampsia. The early period in pregnancy (sixth month), the changes in the urine, and the absence of oedema were all indicative of the severe form of the disease. As it happened, however, we had just successfully dealt with a somewhat similar case in the Hospital; and, with this recent happy result in my mind, I determined to pursue similar lines of treatment. The case to which I refer was one which had been admitted to the
Hospital in July (in Dr Barbour's quarter); she had eclampsia then, but the fits were controlled; she was carefully dieted; the pregnancy went on to the full term, and she was delivered of a living infant on 25th August, and made a perfect recovery. I hoped, perhaps with too much optimism, for a like result in this instance. The patient was, therefore, put in the Hamilton Bed, which is reserved for the treatment of the diseases of pregnancy.

At noon on 7th October she was put to bed between blankets, and was surrounded with hot bottles. Two pints of normal saline solution were injected under the breasts, during which operation she had a severe fit lasting three minutes, checked by chloroform. An hour later she got half a grain of morphia hypodermically, and two minim of croton oil on sugar on the tongue. A soap and water enema gave a very slight result, and a second one was retained. Hot fomentations were applied to the loins, and she was given milk and water as a drink. Later in the day she was given chloral and bromide of potash, and got a diuretic mixture containing acetate of potash.

On the following day (8th October), ten ounces of urine were obtained by catheter: it was acid, had a specific gravity of 1030; contained albumen, 0·21 gr. to the oz., and urea, 10 gr. per oz. She had had a restless night, and a quarter of a grain of morphia had been administered. As the bowels had not moved, an enema was given at 3 A.M., and was retained. She vomited several times, and did not willingly swallow the medicine. The bromide and chloral were given per rectum. At noon, Henry's solution was given, and the bowels moved thrice during the twelve hours following; she also passed urine. There were no more fits; she was conscious, and was perspiring freely. The temperature was 97, and the pulse 94, of very high tension.

On 9th October she seemed a good deal better. During
the preceding twenty-four hours the bowels had moved seven times. More than 52 oz. of urine had been passed; it was acid, had a specific gravity of 1015, and contained albumen (0·2 gr. per oz.) and urea (5 gr. per oz.). She was able to answer questions and to recognise her friends; there was no vomiting, and she was taking milk by the mouth. She complained, however, of severe pain in the back, and the pulse tension was still high.

On 10th October the improvement was maintained, as also on the morning of 11th October; but, later in the day, grave symptoms again appeared. No foetal heart sounds had been heard, so it was suspected that the foetus was dead, and that, therefore, one of the chief reasons for prolonging the pregnancy no longer existed. Vaginal douching was ordered twice daily. The temperature was normal, but the pulse was 102, and of less tension than formerly. The urine, although in good amount (over 60 oz.), was found again to contain granular and hyaline casts and blood corpuscles. She became drowsy, had severe headache and pain in the back, and vomited several times; and, although the bowels were moved well with Henry's solution and an enema, she developed an eclamptic fit at 10.30 p.m. Chloroform was given, and a quarter of a grain of morphia hypodermically.

On 12th October the temperature was 100·4, and the tension of the pulse had again risen; more than 65 oz. of urine were passed, and it had a specific gravity of 1030, contained 0·4 gr. of albumen per oz., and 6 gr. of urea per oz. Vaginal examination showed no change in the state of the os and cervix, and the douching was continued. During the night of 12th October there were two fits; the chloral and bromide, which had been discontinued, were recommenced, and she was given saline enemata every four hours.

Her condition on the morning of 13th October was very grave. A soap and water enema brought away a clay-coloured
and offensive motion. She was very drowsy, and would not answer questions. The urine was being passed involuntarily. As the skin was very dry, a quarter of a grain of pilocarpine was given, and profuse sweating followed. Three fits occurred during the forenoon: one at 7.10, another at 9.20, and another at 11.25. I tapped the spinal canal at 9.30, and again at 12 noon; on both occasions only a few drops of clear fluid came away, and there was nothing like the gush of cerebrospinal fluid which some observers have described. It is noteworthy that from now onwards to the death, which occurred four days later, there were no further fits. The temperature at this time was 100°4, and the pulse was 120, and weak. Vaginal examination showed the cervix still untaken up, but the os was now the size of a two-shilling piece. Labour was going on slowly, and there was rigidity of the cervix, so a Barnes's bag was inserted. A catheter specimen of urine contained 1·6 gr. per oz. of albumen and 6 gr. of urea to the oz.; the specific gravity was 1018, and there were tube casts and blood corpuscles as before. Six hours later, at 5 p.m., I determined to terminate the labour by the use of the Bossi dilator, for, although no further fits had occurred, the patient's state was no better. As the cervix was not taken up, there was great difficulty experienced in equally dilating the posterior lip, and some laceration occurred, although the greatest care was taken and more than twenty minutes were allowed for the dilatation of the cervix from two to a little over three inches in diameter. Then, with forceps, a six and a half months' foetus was extracted, weighing nearly three pounds. The placenta had to be removed by hand, and there was free haemorrhage checked by the hot douche. Ergotin and strychnine were given hypodermically. In the evening the temperature was 99·6, and the pulse 114, weak, and irregular; there was slight jaundice, and the motions were light coloured.
The course of the case during the next three days may be summarised. The jaundice became more and more marked, in the end being intense; there was complete unconsciousness; vomiting was frequent and bilious, and the motions were persistently clay-coloured; the temperature varied from normal to 100, going up to 101 just before death; the pulse remained about 120, became weak, and was occasionally intermittent; the respirations increased to 32 and later to 48 per minute, along with the development of oedema at the basis of the lungs. On one occasion an intra-uterine douche was given, as it was feared that uterine sepsis might be developing; but the fluid returned quite sweet. I may add that thyroid extract and stimulants were given after the birth of the fetus. No evident change in the area of liver dulness could be made out. The patient died on the evening of 16th October.

Dr H. H. Robarts made blood counts on all the days (except two) of the illness. The marked variations in the readings during the first few days were probably due to the effect of the salines under the breasts and per rectum. The count on the 12th October was taken after two fits. The large leucocytosis on 16th October was evidently the result of the pneumonic state of the lungs; it was taken three hours before death.

<table>
<thead>
<tr>
<th>October</th>
<th>Haemoglobin</th>
<th>Red Corpuscles</th>
<th>Leucocytes</th>
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<tr>
<td>7</td>
<td>80</td>
<td>6,020,000</td>
<td>28,000</td>
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<tr>
<td>8</td>
<td>74</td>
<td>5,070,000</td>
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<td>9</td>
<td>74</td>
<td>...</td>
<td>16,900</td>
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<tr>
<td>10</td>
<td>No observation</td>
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<td>11</td>
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<td>13,400</td>
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<td>12</td>
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<td>25,600</td>
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<td>14</td>
<td>No observation</td>
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<td>15</td>
<td>...</td>
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<td>37,500</td>
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<tr>
<td>16</td>
<td>54</td>
<td>3,730,000</td>
<td>41,900</td>
</tr>
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</table>
The autopsy was performed by Dr Stuart M'Donald. There was marked general jaundice. There were no signs of peritonitis. The uterus was empty, and its cavity healthy; there was considerable laceration of the cervix. The whole liver was soft, flabby, and bile-stained; there was a general fatty change, most marked at the periphery of the lobules; and there was some chronic peri-hepatitis over the right lobe. The spleen was not enlarged; it was very soft and flabby; there was acute congestion with some hæmorrhages in the pulp; the Malpighian bodies were not specially prominent. The kidneys were slightly enlarged; both showed well marked chronic parenchymatous nephritis with intense fatty changes and a general bile-staining and old infarcts. The Malpighian bodies were not seen; there were no hæmorrhages and no pyæmic deposits. In the thorax there was general chronic pleurisy on the right side, with obliteration of the right pleural cavity; on the left side there were no adhesions and no effusion. Both lungs were markedly and acutely congested; there were some hæmorrhages and some pneumonic consolidation at the base of the right lung. The bronchi were intensely congested, and the bronchial glands at the root of the lungs were enlarged. There were no septic foci in the lungs. The pericardial sac showed no abnormality, neither did the cardiac valves and orifices; the left ventricle was distinctly hypertrophied; there was well-marked diffuse fatty degeneration of the myocardium of the right and left ventricles; and there was obvious bile-staining. The brain was not examined.

This case of eclampsia presents several features of interest and suggests several speculations. The advanced nature of the renal lesions discovered at the autopsy makes it probable that the patient's health both before and during her pregnancy was far from normal; renal inadequacy was present from the first, and needed only the strain of pregnancy and its altered physiological conditions to bring it into full evidence. The
early date of the occurrence of the convulsions (six months) also supports this conclusion. The question now arises how it is possible to explain the marked improvement which followed the admission of the patient to hospital, and the commence-
ment of the treatment which has been described. Of course, it is reasonable to ascribe this improvement to the treatment; but then there is the difficulty of the temporary nature of the improvement. It seems to me that it was about this time that the foetus died (the state of the foetus at birth warrants this belief), and that this circumstance, taken in conjunction with the commencement of active treatment, explained the temporary amelioration in the symptoms. When, therefore, fits began to recur after the period of improvement, and while treatment was actively going on and the diet being restricted to milk; when, further, the results of the analysis of the urine, the age of the pregnancy, and the general condition of the patient were taken into account, it speedily became evident that we had here to do with eclampsia of the worst type. As the foetus was in all probability dead, the emptying of the uterus did not hold out the large hope of benefit which it commonly does. For these reasons, therefore, it seemed to me that it was fair to try the effect of lumbar puncture, in the hope that it might stop the convulsions. As a matter of fact, no convulsions occurred after the second tapping; but by this time it was evident that labour was in progress, and as the cervix was the cause of great delay, I used the Bossi simply to end a process which was still further exhausting an already worn-out patient. Even before the commencement of labour, there were signs that we had now to deal with hepatic as well as renal inadequacy; and these signs (jaundice, clay-coloured stools) increased rapidly post partum, and no doubt contributed not a little to the fatal issue. The state of the right pleural sac, discovered at the autopsy, must also have lessened the small chance of recovery which the patient had. The
absence of septic morbid changes in the pelvis was a matter for congratulation in a case peculiarly liable to such complications.

The method of lumbar puncture employed in this case was that commonly used when the operation is performed for the injection of cocaine, or for the removal of cerebro-spinal fluid for diagnostic purposes, or for the relief of intra-cranial pressure in instances of tubercular meningitis, cerebral tumour, or uremic convulsions in acute nephritis. An imaginary transverse line was drawn, joining the summits of the iliac crests posteriorly; it was noted that the point where this line crossed the middle line of the back corresponded to the spine of the fourth lumbar vertebra; placing the forefinger of my left hand on this spine I inserted the aspiratory needle (held in my right hand) about half an inch below and to the right of it, and pushed it forward and towards the middle line. In this way it passed in between the laminae of the fourth and fifth lumbar vertebrae, penetrated the ligament and dura mater and reached the arachnoid sac, where it forms a hollow cavity below the level where the spinal cord terminates (first lumbar vertebra). On one occasion I struck the lamina, but by withdrawing the needle slightly and altering its direction, I passed it in easily. On both occasions clear cerebro-spinal fluid immediately began to ooze slowly from the end of the tube. I used an aspiratory needle with a fine stilette in it; the needle ought to be a little over three inches in length. Of course the skin of the back and the instrument were sterilised before the operation was performed. A syringe—the all-glass sterilisable instrument is recommended by Purves Stewart \(^1\)—may be used to draw off the fluid; but in cases, such as eclampsia, in which the fluid is expected to be under high pressure, this may be unnecessary.

The theory of the mode of action of lumbar puncture in eclampsia is very simple, and may be stated in one sentence.

CASE OF ECLAMPSIA,

It is taken for granted that the convulsions are due to increased cerebro-spinal tension; therefore, if some of the cerebro-spinal fluid be removed by puncture of the arachnoid space the tension will be diminished, and the fits will for the time cease; this interval of freedom from fits may be utilised for other forms of treatment which will effectually and permanently remove the cause which has led to the high tension.

T. Arthur Helme was the first to employ this plan of treatment in eclampsia,¹ and he was probably led to try it by the good results obtained by M'Vail in two cases of coma and convulsions due to acute nephritis.² In Helme's case, a typically severe one, in which saline injections, thyroid, and chloral had been given without success, about a drachm and a half of fluid escaped rapidly as if under considerable pressure, and the patient recovered. This case occurred on 19th December 1903. There was increased cerebro-spinal tension in two out of three cases of eclampsia treated by B. Krönig by lumbar puncture,³ for in these instances it was measured, and instead of being about 120 mms., it was found to be as high as 500 mms. and 600 mms. in a convulsion. Krönig's cases all recovered, although it was difficult to trace any immediate good effect to the spinal puncture. Helme's observation seems to have been overlooked by Krönig, as Kleinwächter pointed out.⁴ Krönig's cases were published in October 1904, and, in November, Max Henkel reported ⁵ as many as sixteen instances of eclampsia treated by lumbar puncture. In Henkel's series there were four deaths (25 per cent.). His cases really antedated both Helme's and Krönig's, for he states that they occurred in 1901; he did not publish them, because they gave no better results, but rather a higher mortality than he

² Ibid., ii. for 1903, Oct. 24.
³ Centralbl. f. Gynäk., xxviii., 1153, 1904.
⁴ Ibid., xxviii., 1336, 1904.
⁵ Ibid., xxviii., 1329, 1904.
had got by other methods of treatment. It has also to be noted, however, that in eleven out of his sixteen cases Henkel not only punctured the subarachnoid space, but also injected cocain into it. In four only of the sixteen cases was there a distinct increase in the quantity of cerebro-spinal fluid, and of these one died; in five cases there was a slight increase, and of these two proved fatal; while in seven there was no increase at all, and of them one ended in death. A fair estimate cannot yet be formed of the value of this method of treating eclampsia; so far, the cases chosen for trial have been serious ones, and generally the malady has been far advanced when the tapping was performed. If we include Henkel's sixteen cases, there have been reported in all twenty-one cases, of which five have ended fatally, a degree of mortality not differing much from that usually recorded in the annals of eclampsia. It seems to me that lumbar puncture may find a sphere of usefulness in those cases of eclampsia in which the chief therapeutic indication is to control the convulsions, so as to gain time for the application of other measures, such as the use of purgatives, diuretics, antitoxic agents, and obstetric interventions. At the same time, the possible risk of precipitating the occurrence of haemorrhages in the central nervous system by sudden changes in the cerebro-spinal tension must not be forgotten in estimating the value of this form of operative procedure.

It is somewhat striking that the two most recent suggestions for the management of eclampsia gravidarum—lumbar puncture and renal decapsulation—should both be surgical in their nature. Hitherto the treatment of this dread complication has been medical and obstetrical, but now, as in so many other diseases, surgery is being introduced as a possible plan of procedure. With regard to decapsulation of the kidney, which Edebohls of New York has twice performed in eclampsia,¹ and

with apparent success, I cannot speak from personal knowledge. In nephritis, not associated with pregnancy, it has been shown that the decapsulation seems to have rather increased than diminished the formation of fibrous tissue in the affected kidneys; but it is too soon to express a definite opinion upon this method of surgical intervention. It is to be noted that Sippel,\(^1\) apparently without knowledge of Edebohls's cases, recommends renal decapsulation (nephrotomy) in severe cases of eclampsia.

Professor Simpson said he had no experience either of lumbar puncture or kidney decortication in eclampsia. It was interesting to notice that the surgeons seemed to be taking this kind of case into their hands. He thought the paper was of value in directing our attention to that means of treatment. Eclampsia was such a dark and dismal region that they were glad of any pioneer who could show them how to modify the disease in any way. The case described gave him the impression that the liver should not be overlooked in determining the central seat of the poison at work in that disease.

Dr Ritchie said the paper was one of great interest. He did not think the cases cited by Dr Ballantyne lent any support to the idea that eclampsia was dependent on increased intracranial pressure. In the majority of cases none was found, and they must look for some other cause. Dr Church had referred to the large amount of urine and urea excreted, and yet fits had developed. The offensive pale motions directed their attention to the condition of the liver and contents of the bowels as having a causal relation through toxic poisoning.

Dr Haig Ferguson thought that Dr Ballantyne had practically proved, by his case, by his paper, and the cases brought forward in illustration of it, that neither lumbar puncture

\(^1\) Centralbl. f. Gynäk., xxviii., 479, 1904.
nor decapsulation were very important additions to our technique; where eclampsia cases died, the post-mortem showed that death was often due to some condition to which neither lumbar puncture, thyroid extract, or other treatment would do any good. Hæmorrhages were not infrequently present in the brain and subarachnoid space, and liver; and serious organic changes in the kidneys. It was in cases where the pathological changes were not so far advanced, that recovery took place; and it was impossible to think that lumbar puncture would save severe cases, where, for instance, subarachnoid hæmorrhages were present. The paper was of interest in calling attention to a new form of treatment, though he felt convinced that in suitable cases better results could be obtained by other and possibly less heroic means.

Dr Church said three points struck him in the narration of this case—(1) the larger elimination of urea than we are accustomed to have in a case of eclampsia, on one occasion the amount rising to 360 grains in twenty-four hours; (2) the variation in the pulse tension,—was the tension recorded by the sphygmograph, or was it simply the impression conveyed from the finger? (3) the rapid increase of leucocytes, rising rapidly from 10,000 to 40,000, while the red corpuscles decreased. He hoped Dr Ballantyne in reply would enlarge upon these difficult features in the case. He thought the Society was much indebted for the minute observations he had made.

Dr Brevis (President) said his own experience was limited, but he thought with Professor Simpson that it would be the surgeons who in the future would solve the problem of successful treatment. He had never operated on the kidney in eclampsia, but had split a kidney for hæmaturia. The albumen and blood disappeared in a very short time, and the patient remained well. He hoped that method would be
tried in cases of eclampsia. They should expose the right kidney, divide it into two, and sew the halves together again.

*Dr Ballantyne* said the large amount of urine and urea had been noticed by Professor Simpson and himself in cases treated by morphia. The morphia stopped the fits, and next day there was a considerable flow of urine, but after twenty-four hours fits began once more. The estimation of the blood and urine were carefully done. There was also a marked diminution of haemoglobin towards the end. Intracranial pressure was evidently not constant in eclampsia, as his case showed, but several of the recorded cases showed a remarkable increase in the pressure, confirmed in two instances by the manometer. He had been tempted not to record this case, but he thought, since Dr Helme's paper had been so enthusiastic in support of spinal tapping, that it was well that a case which had not proved so satisfactory should be recorded.

### VII. MALTA FEVER IN PREGNANCY.

By J. W. Ballantyne, M.D., F.R.C.P.E., Lecturer on Midwifery and Diseases of Women, Medical College for Women, Edinburgh; Physician to the Royal Maternity Hospital, Edinburgh.

Cases of Malta, or Mediterranean Fever, in pregnancy are of sufficient rarity to warrant their being recorded even when, as in the present instance, they are not accompanied by interruption of the gestation or any other accident.

The patient who was the subject of the above-named complication of pregnancy came under my care in July 1904. She was 25 years of age, and was within a few weeks of the full term of her first pregnancy. She and her husband, a medical man, were living in India when she was attacked by the fever. The first day of the last menstruation was
26th October 1903; and the fever began about the first day of December, when, therefore, it may be supposed she was about a month or five weeks pregnant. The following notes of the course of the case were supplied to me by her husband.

The symptoms and signs at the commencement of the fever were lassitude, constipation, slight enlargement of the spleen, and pyrexia. The temperature rose to about 103° F. each evening, and dropped a degree or two in the morning. This state of things continued for about six weeks, the temperature, however, often dropping to the normal in the morning and beginning its rise again about noon or 1 P.M. During this time quinine was administered as a therapeutic test in large doses. At first it was given in acid mixture, about 25 to 30 grains in the twenty-four hours. As this caused nausea and vomiting it was next given as intramuscular injections, to the extent, during one period of twenty-four hours, of 40 grains, after it had been given to the extent of 30 grains daily for several days. Since this treatment had no discernible influence upon the course of the fever, the patient’s blood was tested for the serum reaction; and Major Semple (I.M.S.) reported at the end of December that it reacted to the Malta fever test. Quinine was not given again. At the recommendation of Sir Patrick Manson and others, the patient undertook the voyage home to England. She left India on 23rd January 1904. During the voyage arsenic was tried, but seemed to have little effect; the temperature, however, often rose only one and a half to two degrees above the normal. Thereafter, the fever was often absent for a week or ten days; and then would begin the rise again. It lessened month by month, and during April 1904 the constipation (which had been a prominent feature) began to yield. During the first six or eight weeks it had been extremely obstinate, and large doses of powerful purga-
atives (e.g., of jalapine) had been required to produce even a mild action. In June the blood was again tested in the School of Tropical Medicine in London; and it was reported that it no longer reacted to the Malta fever test. After the beginning of June no further fever was noticed. The joint pains of a rheumatic and neuralgic character, which are often severe in this disease, were moderate in this instance; there was slight sciatica. Enlargement of the spleen was palpable until about the end of March.

The pregnancy was further complicated by the presence of the intestinal parasite, Tænia mediocanellata. This may have been one of the causes of the frequent nervous symptoms of depression and irritability which existed during the whole time, and lasted till a month after delivery.

Labour pains began on the evening of 5th August 1904, and continued during the night. At 8 A.M. on 6th August, the os was found to be fully dilated, and the head was descending, L.O.A., with the membranes unruptured. The waters came away about 10 A.M., and the child was born three-quarters of an hour later. The head passed very rapidly over the perineum, which tore to some extent, requiring the introduction of two stitches. With this exception, the labour was absolutely normal. The third stage was uneventful; and the placenta, which was of the circumvallate or marginate variety, was easily expelled. In the evening the temperature was 101, and the pulse 80; but after a good night's sleep the temperature and pulse fell to the normal, and the patient made an uninterrupted recovery. About the beginning of September, however, she had a high temperature for a day or two, regarded by her husband as due to influenza, a friend suffering from that malady having been to see her. The baby, a female, was healthy, and continued so; she was well nourished and well formed.

In this remarkable case two facts are of outstanding
importance. One is the administration, with no serious con-
sequences, of massive doses of quinine in the form of intra-
muscular injections, to a pregnant woman who was not
suffering from malaria. It has been customary to regard
quinine as an oxytocic medicine save in the cases where on
account of the co-existence of malaria it may be presumed
that the force of the remedy is exerted against the malarial
poison, and so does not set up uterine contractions. The
history of the case, the serum test, and the duration
of the pyrexia show that this was an attack of Malta Fever
or Undulant Fever (as it is more commonly called), and not
one of malaria; otherwise, of course, it might be said that
after all we had here to do with ordinary malaria, and that
therefore the quinine had no oxytocic effect. A further
argument against this conclusion is given by the non-efficacy
of the quinine as an antipyretic, even when given in massive
doses. We must, therefore, conclude that even in cases of
fever which are not malarial, and in which quinine has no
antipyretic action, that drug may not interfere with the
normal progress of pregnancy although given in large doses.

The second fact is no less interesting. In this instance
the attack of Malta fever lasted from the first day of December
1903 to the beginning of June 1904, and for six weeks the
temperature was above 103° F. every evening. Yet, notwith-
standing this prolonged pyrexia, the pregnancy not only pro-
gressed satisfactorily to its normal termination but was followed
by a normal labour and puerperium, and resulted in the birth
of a healthy female child, who had been nourished by a
placenta which although marginate in type showed no gross
lesions or haemorrhages. The mother, it may be added, was
able to suckle her infant. Are we then to conclude that
Malta fever is an innocuous complication of pregnancy? I
do not think we can do that, and for the following reasons.

Malta fever is a pyrexial disease, endemic in certain
localities, including Malta, Gibraltar, and the Mediterranean ports in general, but occurring also in India (as in the present case), in North and South Africa, in South America, and in China. It has a long and indefinite duration, and shows a marked tendency to undulatory waves of temperature, from which comes the name Undulant Fever so often given to it. Its symptoms may be gathered from the following synonymous names which have been given to it: intermittent or remittent typhoid, typho-malarial fever, gastric or bilious remittent fever, and simple continued fever. It is due to a microbe, the micrococcus melitensis, discovered by D. Bruce¹ in 1886; it is probably air-borne; and a partial immunity is acquired by long residence in an infected area. It has a low mortality, about 2 per cent. In the early stages of the fever, the diagnosis was at one time made with great difficulty, but now that Widal’s serum test is available, it has become comparatively easy, agglutination being obtained about the fourth day of raised temperature. The chief danger is heart failure; but hyperpyrexia may also occur. Neuritis, acute or subacute, is very common, and, as in the case recorded, there may be considerable nervous depression and irritability. No drug has any specific action on the fever. It is now becoming customary to allow a more generous diet, including solid food, instead of the beef-tea and milk of former times; and a marked improvement in results has followed the innovation. Malta fever, therefore, is a disease resembling typhoid in many particulars; for this reason alone it may be expected to become a serious complication of pregnancy. There is, however, more definite evidence upon the matter from direct observation of cases in which the fever has gravely interfered with the progress of gestation.

G. Levi,² in an article on “Gravidanza e Febbre Mediter-

¹ Practitioner, xxxix., 161, 1887; xl., 241, 1888.
² Archivio di Ostetricia e Ginecologia, xi., 535, 1904.
ranea," has gathered together eleven cases, observed in Tunis, in which Malta fever attacked pregnant women. Three of the eleven cases occurred in Levi's own practice, and the others were managed by Tunisian medical men, who furnished him with the details. In five of the patients the fever came on at the third month of pregnancy, in two at the fourth month, in one at the fifth, in two at the seventh, and in one at the eighth. They all had typical attacks save one, in whom there was marked jaundice. Abortion occurred in six cases: in two at the third month, in three at the fourth month, and in one at the seventh. Five of the pregnancies went to the full term: in them there was the record of one dead-born child, two who died in one and several months respectively, and two who remained alive at the time of writing. The infant that was dead-born died in the labour; it was markedly jaundiced, as the mother had been. In six of the cases the fever ceased about a week after the termination of the pregnancy, in one in twenty days thereafter, in two in a month, while in two it was still present at the end of the puerperium. In two only of Levi's cases were healthy infants born at the full term, and in both of these instances the Malta fever had attacked the mother late in pregnancy, viz., at the seven and eighth months respectively. In the case reported by myself, the fever came on at the fifth or sixth week, and yet the pregnancy was uninterrupted, and the child was born healthy and continued in good health.

From his clinical experience, Levi draws the following conclusions. Malta fever is somewhat rare in pregnancy. The interruption of the gestation happens somewhat frequently, especially when the infection occurs in the early months. The most common cause of the interruption is the high temperature. The infection may pass from the mother to the foetus, but more usually the latter is poisoned by the toxins which are generated. The medicines which are commonly employed in
the treatment of Malta fever do not modify the course of the pregnancy. Abortions, labours, and puerperia are not modified by the infection with Malta fever; and the effect of the pregnancy upon the fever would seem to be practically nil. Labour and the puerperium, when they occur in the later and less virulent stages of the fever, would seem to have a favourable effect. The treatment ought to be the same as that used in Malta fever in other circumstances.

With most of Levi's conclusions it is possible to agree; but the case just recorded proves that even a long continued and high temperature in the early months need not be accompanied by abortion, and may even be followed by the birth of a full-time, living, and absolutely healthy child. Malta fever may be a rare complication of pregnancy; but it does not seem, taking Levi's statistics themselves as a basis, that there is evidence that pregnancy confers even partial immunity from Malta fever.

Professor Simpson said he had no experience in this matter, but had been interested in the communication, which was of importance in bringing before them a rare complication of pregnancy. It was an important addition to their Transactions.

VIII. HEREDITY IN OVARIAN CYSTOMA: HISTORY OF A MOTHER AND HER TWO DAUGHTERS SUBJECTED TO OVARIOTOMY.

By Professor A. R. Simpson.

Dr Lever, recording observations made in the Midwifery department of Guy's Hospital in Guy's Hospital Reports for 1855 (Third Series, i. 79), has a paragraph entitled "An account of seven deaths in one family from Ovarian Disease, showing
the Hereditary Nature of the Malady." The disappointingly brief account reads as follows:

"There is much diversity of opinion amongst writers whether ovarian disease is hereditary or not. I have not the slightest difficulty in giving my opinion, and emphatically state it is. As certain as I am that malignant disease of the uterus is transferred from generation to generation, so from experience I am convinced that ovarian disease is transmissible. It is true that ovarian mischief more often attacks the unmarried and the sterile, but it is also true that women who have borne children, and have ceased to conceive, may become the victims of this disease. With respect to the exciting causes, I must leave that question to a future communication.

"The following persons were all of one family and allied by blood, and they were all the subjects of ovarian disease:

M. F., died at the age of 79 years.
M. A., " 77 "
M. S., " 48 "
E. S., " 28 " inspected by Mr Callaway.
M. D., died at the age of 49 years.
E. D., " 20 years, operated on unsuccessfully by Mr Key.
M. S., an out-patient at Guy's, and who ere long will die."

In what relation, or with what degree of consanguinity the seven individuals stood to each other is not stated.

Sir J. Y. Simpson, in his Clinical Lectures on the Diseases of Women (p. 409), says: "In some few and rare cases ovarian dropsy seems to be hereditary, being developed in one or two females in successive generations of a family. I have known the disease affect three sisters in a family."
Dr. Rose writes to *The Lancet* of December 22, 1866, ii. 696, that there had been in Kidderminster Infirmary two sisters, both suffering from ovarian dropsy, who stated that their mother's sister had the same disease.

Olshausen, with characteristic thoroughness, refers to these cases in his *Krankheiten der Ovarian*, 1879, p. 76. Discussing the allegation of Köberle, that where there is a hereditary disposition the disease is bilateral, he states that in two pairs of sisters that had come under his own observation the disease had in all been unilateral.

Von Winckel (*Lehrbuch der Frauenkrankheiten*, 1886, p. 644) speaks of these instances of ovarian cystomata occurring in sisters, and says he had seen such cases.

In Veit's *Handbuch der Gynaekologie*, 1898, iii. 412, Pfannenstiel says: "We still know but little as regards hereditary predisposition to ovarian tumours. The number of cases of ovarian tumours in sisters or other blood relations is indeed strikingly small in comparison to the frequency of ovarian neoplasms in general. Still, a hereditary disposition, such as is generally recognised in regard to cancers, is also here not improbable, if one keeps in view disposition in general, and not merely the disposition to development of special tumours in special organs."

The late Professor Löhlein gave an interesting history (*Monatsschrift für Geburtshilfe und Gynaekologie*, iii. 91, 1896) of three sisters who had all been subjected to ovariotomy for proliferating cystomata of both ovaries. He removed both ovaries in the case of one of the sisters. Köberle performed the same operation on another. In the third sister, Köberle removed a cystic ovary and noted that the other ovary was healthy. Fifteen and a half years later she came under Löhlein's care, when he performed for her a second ovariotomy, her remaining ovary having now degenerated into a cystoma. He could not ascertain that there was any further history in the
family of development of the disease, but considered that some
hereditary influence might be at work.

Pozzi, in his *Traité de Gynécologie*, 1897, p. 818, says:
"Curious cases have been noted of cysts in the same family
among sisters," without recording any instances.

Martin (*Krankheiten de Eierstöcke*, p. 118, 1899), referring
to Löhlein's article, says: "Undeniably, too little attention has
hitherto been given to this kind of hereditary burden, so
that we must confine ourselves to collecting separate observa-
tions. I can myself refer to two examples of ovarian neoplasms
in sister-pairs; in both instances we had to do with glandular
cystomata."

Except for the supposed ovarian cystoma in the aunt of
Dr Rose's pair of sisters and the indefinite possibility of
varying ranges of generation among Dr Lever's group of seven
relatives who died of the disease, all the illustrations of heredity
in ovarian neoplasms have been drawn from their develop-
ment in sisters—usually two, more rarely three, as in Sir
James Simpson's and Löhlein's cases, having developed the
mischief.

The three patients whom I show to the Society on this
occasion have the relationship of mother and two daughters.
I give you their histories, taken from the ward record by Dr
Barnetson, resident physician, in the order in which they came
under observation.

I.—Mrs S., married, æt. 25, ii.-para, admitted 18th November
1899.

*Complaint.*—Swelling coming down front passage since
January 1899.

*History.*—In January 1899, when three months pregnant,
was blown over and fell on her right hip, and for two weeks
suffered from an intermittent pain in right groin. In May,
noticed something coming down the vagina which proved to be
a rectocele. On 1st August, child was delivered with forceps, a face case. Rectocele did not interfere with birth. No swelling was observed when a vaginal examination was made after labour. On 23rd September was seized with a sudden sharp throbbing pain on right side of abdomen, spreading across to left side—this confined her to bed for four weeks—pain grew less. Three days after severe pain began, had a slight red discharge from front passage lasting two days. In November she ceased nursing, and menstruation returned and lasted five days, attended with some degree of pain.

Pregnancies.—Two, eldest child two years of age, youngest four months old. Both labours were instrumental. The patient nursed the eldest for thirteen months and the youngest for two months.

Physical Examination.—The lower part of the abdomen is distended by a swelling, rising out of the pelvis as a rounded mass, regular in outline, firm in consistence, slightly movable and somewhat sensitive. It reaches to within two inches of the umbilicus. There is percussion dulness over this area, and no bruit is heard.

Per Vaginam.—Posterior wall protrudes on straining. The body of the uterus lies posteriorly, and in front of it is a large elastic swelling continuous with the abdominal tumour and extending to both sides of the pelvis. Sound passes in 2 inches with concavity backwards.

Operation, 22nd November 1899.—On opening abdomen, a brownish-coloured spherical tumour was found on right side of abdomen. After some adhesions of bowel were separated off, the pedicle was seen to be twisted four or five times. Pedicle crushed with Doyen's angiotribe, ligatured with a thin silk thread, and the tumour cut away. The tumour was multilocular, with thick congested walls, and contained quantities of extravasated blood, some of which was organised. The Fallopian tube was greatly distended. As the left ovary was
found to be undergoing cystic degeneration and enlarged till it measured three inches by two, it was removed.

II.—M. M., single, æt. 19, nullipara, admitted 29th November 1902.

Complaint.—Swelling of abdomen for four months. Pain on right side, six weeks.

History.—About four months ago she noticed a swelling on the right side, soft in character, and about size of a fist. Since this time the swelling has gradually increased and extended to the left side. About six weeks ago she experienced for the first time a dull aching pain which lasts for a few hours, then leaves her. She has always enjoyed good health. Her periods are perfectly regular and of usual amount, and do not cause her pain.

Physical Examination.—The swelling extends in rounded form above the umbilicus and tails off into the flanks. There is a distinct thrill on tapping. It feels elastic and is not tender. It extends to the tip of the ensiform cartilage and to the costal margins laterally. Its upper margin is distinct. There is dullness all over on percussion. No bruit heard on auscultation. In anterior and right lateral fornix was a soft bulging which with the bimanual gave a thrill. In the left fornix a resistant body is felt which probably is the body of the uterus. Bimanually the fundus could not be felt.

Operation, 6th December 1902.—Abdomen opened, cyst punctured and an albuminous-looking fluid escaped. There were no adhesions. The broad pedicle was ligatured and the tumour removed. It was formed mainly by one cyst, with some smaller cysts and a healthy portion of the ovary close to the pedicle. As the left ovary was enlarged and cystic, it was at once removed.

III.—Mrs M., married, æt. 60, x.-para, admitted 3rd January 1905.
Complaint.—Great heaviness along lower part of abdomen.

History.—For the last ten years patient has noticed abdomen gradually swelling. For the past five years has not worn stays, as they caused her difficulty in breathing. About one year ago she experienced a bearing down in the lower part of abdomen, more marked on the right side. She also felt her legs weak. She was able to continue her household duties until October 1904, when she laid up for a few days' rest. She continued well after getting up until the end of November, when she was attacked with severe pain, most acute on the right side, and extending across the abdomen. The pain continued severe for two days and then gradually went away. The pain was accompanied by vomiting. Ten days ago the patient became "faintish" and had an escape of dark-coloured blood from the vagina. Except for scarlet fever, the patient has had excellent health.

Family History.—Mother died at 74; father died at 64. Has five sisters who present no history of any gynaecological condition, and ten children—five boys and five girls. Of the daughters, the eldest is married, is in good health, and has five children—two boys, three girls. The second is Mrs S., who was the first of our three ovariotomised patients. The third died in childhood. The fourth is our second case of double ovariotomy. The fifth is a healthy unmarried girl of sixteen.

Sexual History.—Menstruation ceased 15 years ago. Never had menorrhagia, metrorrhagia, or dysmenorrhoea. She nursed all her children, and has generally been in the enjoyment of good health.

Physical Examination.—Abdomen is very corpulent, slightly bulging on the right side. The abdomen is very tense on palpation, the muscles being held very tightly. A large tumour, somewhat tense, round in outline and perfectly smooth, and with a distinct fluid thrill, can be felt rising out
of the pelvis and occupying the right iliac and lumbar region
and part of the hypochondrium, and extending into the
umbilical and hypogastric regions. Percussion showed this
area to be dull all over. No bruit was heard.

*Per Vaginam.*—The patient has a prolapse of the upper
half of the posterior wall, which comes down on coughing.
The uterus is felt in anterior fornix. Nothing is felt in other
fornices. The abdominal tumour is thought to be ovarian, with
a long pedicle.

*Operation, 17th February 1905.*—Tumour punctured. A
few omental adhesions were separated. Pedicle, fairly long,
clamped by angiotribe and ligatured. The tumour was poly-
cystic ovarian, with one very large cyst and several smaller
ones. The fluid which escaped on puncture was at first clear
yellow, and then had a greenish tinge. The sediment was
decidedly green. The fluid was albuminous. The other ovary
was pulled up, and as it presented the usual appearance of a
healthy senile ovary, it was not further interfered with.

When the younger of the sisters was admitted to the
Infirmary it was recorded in her schedule that her sister had
previously been subjected to ovariotomy. It would hardly
have been worth while to record their histories as further
illustration of heredity in ovarian disease, although I note
they are on the side of Köberle as against Olshausen in that
in both of the sisters the degeneration was bilateral. The
history of the elder sister illustrates, further, how such tumours
may co-exist with pregnancy and not awaken suspicion till
pedicle-torsion is produced, as it often is, some time after
labour. They both confirm the importance of examining the
second ovary in all cases of removal of a cystically degenerated
gland, for if in either of these two women only the large
right-sided tumour had been removed, then there was the
likelihood that the fate of the third of the Köberle-Löhlein
sisters would have happened to them—they would almost
certainly, after a lapse of years, have come a second time under the ovariotomist's knife.

But whilst the occurrence of ovarian cystoma at an early age in the two sisters might have been noteworthy in relation to the question of the influence of heredity in this disease, their history acquires quite an exceptional value when there is added to it the history of the development of the same disease at an advanced age in their mother. I have not lit upon any other such clear record of its appearance in a mother and her daughters.

There are two considerations which help us to understand the rarity of observations as to heredity in ovarian disease, as compared with the illustrations met with of heredity in cancer.

First, in the transmission of cancer there is the possibility of its descent along two lines, the male and the female. This might suggest the possibility of attenuation of the taint, but assuredly it gives not only more chance of transmission, it also gives the possibility of intensification of the unhappy tendency. Thus I have known of a woman upwards of thirty marrying a husband more than ten years her senior. They had only one son, and the mother having died of cancer of the mamma about the age of sixty, and the father some years later having died of visceral cancer, the son died whilst still young of malignant disease of the testicle and liver. In regard to ovarian cystoma, on the other hand, the possibility of descent can attach only to the maternal predispositions, so that the chances of hereditary transmission are greatly lessened, and there is no possibility of intensification from the other side of the mischievous tendency.

Secondly, it is the germinal glands themselves that are the seat of the disease. Their degeneration involves lessened power of reproduction, so that married women who suffer from ovarian cystoma are barren in the proportion of one in three or four instead of one in eight or nine, as in the general
community. The very development of the disease thus lessens the chances of its descent to another generation, and whilst there is the bare possibility that some other of Mrs M.'s descendants may yet become the subject of an ovarian tumour, so far as concerns those whose history I have recorded, M. M. has no germ left to which she can transmit her malady, and the only other individuals who could possibly share some day in the *damnosa hereditas* would be Mrs S.'s little six and eight year old girls.

*Dr Haultain* said he had been very interested in the paper. He had never seen a similar case in his experience, and thought it must be a coincidence, and not hereditary. He had seen more cases in fibroid disease. He even preferred to think cancer of uterus was not hereditary. He did not think they could draw any deductions from the case. The paper was exceedingly interesting, and well worthy of being brought before them.

*Dr Ballantyne* said he was very pleased to have heard the paper. It was a clear case of heredity, and a very interesting one. He himself had found striking instances with regard to the heredity of fibroid and also ovarian tumours in working at antenatal pathology. It would be interesting to find out what exactly was transmitted. It was well known that large families were hereditary, and the daughters were likely to have large families or give birth to twins. In such cases Hellin had shown that the ovaries had large numbers of follicles, a persistence of the fetal state; certain follicles might become cystic, and this tendency might be transmitted. There was also the interesting relationship of lutein cysts to cancer of the uterus.

*The President* thought that heredity might have an influence in producing ovarian disease. He had himself operated on three sets of sisters, and also on a girl whose grandmother,
two aunts, and two cousins were all operated on for ovarian tumour; and another with two aunts and two cousins. He remembered those cases, and doubtless there were more instances. The subject was well worthy of research.

Professor Simpson said Dr Haultain was quite justified in taking up the position he did, as every one was free to doubt the influence of heredity in disease, but it was more important to keep a record of observed cases where heredity was possible. He was glad to hear the President mention his cases, and was sure there were many cases of heredity in ovarian disease.

IX. PATHOLOGICAL CONDITION OF THE OVARIIES AS A POSSIBLE FACTOR IN THE ETIOLOGY OF UTERINE FIBROIDS.


The nature of the primary etiological factor in the production of uterine fibroids is one of the problems of gynaecological pathology which as yet remain unsolved. That this is so is by no means a result of neglect, for it has received much attention, and various theories have been propounded. Two of these theories are markedly original, and, when put forward, received considerable attention, viz.: the theory of an organismal origin put forward by Galippe and Landouzy (1), in 1887; and the theory, favoured by Recklinghausen (2), Nagel, and others, that all uterine myomata arise from some abnormal growth of muscle around remnants of the Wolffian or Müllerian ducts which persist in the uterine wall. As yet, however no one of the many theories has met with any very general acceptance.

In regard to the definite anatomical position in which the
earliest new growths are found, there is much more general agreement.

Pilliet (3), in 1894, advanced the theory that the earliest stage was a perivascular deposit of embryonic cells, due, he stated, to increased activity of the tunica adventitia of the uterine capillaries.

Whether authorities agree or not in regarding the adventitia as the producer of the embryonic cells, there is little doubt that in the case of hard, multiple myo-fibromata, the perivascular theory has been very generally accepted, and has had great support from the careful microscopic examination of early cases.

In view of the importance of the uterine blood supply, let us glance for a moment at its relations. In considering the uterine blood supply much attention has been paid to the tortuosity of the vessels and their other minor details, while but little notice has been taken of the anastomosis of the uterine and ovarian arteries. The ovarian artery, after sending in branches at the hilum, and a branch to the Fallopian tube and the round ligament, passes to the uterus as a vessel of considerable size; here it bifurcates, one branch descending to unite with the uterine artery, and the other joining a similar branch from the ovarian of the opposite side. From this utero-ovarian arch branches pass to supply both aspects of the uterus above the level of the cervix. The venous circulation of the ovaries, as found in the pampiniform plexus, communicates freely with the uterine plexus; further, the lymphatics of ovary and uterus have numerous connections.

It seems not without significance to note that the area of the uterus which has this peculiar vascular supply is the area which undergoes the most characteristic hypertrophy during pregnancy, and, further, is the area of selection for fibroid growths, for, although recent statistics have tended to show that cervical fibroids are not so uncommon as was formerly
supposed, still, the most liberal estimate puts them down as under 5 per cent. of all fibroids.

So far, the supporters of the perivascular theory have explained the comparative rarity of cervical fibroids on the purely mechanical theory that the growth is less likely to take place where the uterine vessels are free from tortuosity. If, however, we adhere to the perivascular theory, and so far as it goes it has the strongest support, we must surely seek for some explanation of the tumour growth beyond the mere form and course of the vessels. If the growth originates in relation to the blood-vessels, we are justified in at least suspecting that the cause of the growth is to be found in the blood circulating in these vessels.

Starting from this point of view, I have carried out a series of observations with the purpose of ascertaining if there were in the ovaries associated with fibroid tumours any constant, or even frequent, departures from the normal structure.

I have examined the ovaries in 20 consecutive cases of uterine fibroids in which hysterectomy was performed. Though consecutive cases, they were "selected," in so far that they were all between the ages of 25 and 45, and may thus be fairly classed as in their reproductive period when the ovary should be discharging its function of ovulation. Of the 20 cases, in 16 both ovaries were removed; in the remaining 4 cases, 1 ovary only was removed. As a control, 20 sets of ovaries were examined, which had been obtained post-mortem from patients between the same ages who had died from non-pelvic, and, so far as possible, acute diseases, and in whom the uterus presented no naked-eye changes.

The method adopted in the examination of both series was the same. The isolated ovaries were measured in their three diameters, and weighed before being put into any fluid. Any surface, naked-eye abnormalities were noted. A longitudinal section was made, passing from hilum to free border;
the naked-eye characteristics of the surfaces thus exposed were noted. Two sections were then removed from each ovary for microscopic examination. The sections were so cut as to allow of cortex and medulla being examined. Both naked eye and microscopically, special care was exercised in noting the presence of mature Graafian follicles or recent corpora lutea.

Without entering into details, the results of the naked-eye examination may be briefly stated. The ovaries removed with fibroids were found to be heavier, longer, broader, and thicker than the ovaries removed post-mortem.

Both in operative and post-mortem cases the right ovary was found to be greater in all dimensions than the left.

As to gross changes:—

The operative ovaries exhibited various changes in form: In several cases there was marked elongation. In two cases the ovaries were quite spherical. In one case one ovary was completely cystic. Exclusive, however, of such gross changes, the ovaries removed with fibroids exhibited on the surface a much smaller number of ripe Graafian follicles or recent corpora lutea than the ovaries removed post-mortem. Further, the ovaries removed with fibroids were frequently studded with small cystic areas.

When the ovaries were cut from hilum to cortex and the cut surfaces carefully examined, several marked pathological conditions were found.

In one case the ovaries associated with a fibroid were found to be the seat of very well-marked haematomata of almost equal sizes in the two ovaries. In another case one of the ovaries was found to be replaced by a mass of necrotic tissue surrounded by a firm fibrous capsule (Fig. 1).

Apart, however, from such gross changes, there were two conditions found in the ovaries removed along with fibroids as contrasted with the ovaries got post-mortem.

Out of the operative series 12 ovaries were found to
contain multiple small cystic areas (Fig. 2), while in eleven cases there were, in one or both ovaries, areas of varying size, surrounded by a firm fibrous wall, in which the ovarian tissue was replaced by a white pultaceous substance (Fig. 3).

Microscopic examination showed the walls of these areas to consist of layers of connective tissue, while the contents were myxomatous and almost structureless; at the margins, near the connective tissue walls, there were cellular remains (Fig. 4); in the centre of the area the contents were quite structureless.

In the 40 post-mortem ovaries such cystic or degenerated areas, while not entirely absent, were comparatively rare, and when present were in no case of a size comparable to those got in the operative cases.

An examination of the cut surfaces further confirmed the observation that mature Graafian follicles or recent corpora lutea were rare in the ovaries associated with fibroids as compared with the ovaries got post-mortem.

As regards the microscopic examination, all the slides examined went to confirm the above conclusion as to the comparative rarity of mature Graafian follicles or recent corpora lutea in the operative specimens.

In regard to the origin of the areas of degenerated tissue found so frequently in the ovaries associated with fibroids, there can be no doubt that they arose from retrograde changes either in Graafian follicles which had not ruptured, or in corpora lutea.

From the above analysis two points stand out in connection with the ovaries associated with fibroid tumours:

1. As a rule the normal function of ovulation was in abeyance.

2. There were marked retrograde pathological processes going on in connection with the Graafian follicles and corpora lutea.
From the time of Brown-Séquard the view as to the existence of an internal ovarian secretion has been more and more widely accepted. Agreement as to its exact chemical constitution may not yet have been arrived at, but its existence is now beyond doubt. Whatever be the nature of this secretion it stimulates oxidation, and its loss between puberty and the menopause leads not only to general nervous symptoms, but also to the failure of normal tissue oxidation, as shown by the tendency to adipose deposit in the castrated. The local changes induced by the removal of the ovaries are equally well marked and of more importance in regard to the present question.

Double oöphorectomy between puberty and the menopause leads to a diminution in the length and volume both of the uterus and vagina. Further, Buys and Vandervelve, in an experimental research on the rabbit, showed that in rabbits on which double oöphorectomy had been performed there was not only a well-marked atrophy of the uterine muscular tissue, but also a fibrous deposit in the endometrium. Such observations seem to place beyond reasonable doubt the fact that an internal ovarian secretion is necessary to maintain the genital organs in a physiological condition during the reproductive era of a woman's life.

But if an internal ovarian secretion is necessary for the mere maintenance of the normal condition of the uterine muscle, one would expect that during pregnancy there would be some provision for the increase of this secretion in order to aid the hypertrophic changes in the uterine muscle demanded by pregnancy. And this is in reality exactly what takes place, for during pregnancy the function of ovulation is, as a rule, suspended in order that the ovarian energy may not be dissipated on the maturation of Graafian follicles, whose ova, if discharged, would of necessity be wasted, but may be conserved for the production of an increased internal secretion, and for
the full development of the true corpus luteum of pregnancy, a structure to which recent observations assign an important function during pregnancy.

Between the ovary of pregnancy and the ovary found associated with fibroids there is thus seen to be a striking parallel.

In both the essential function of the gland—i.e., ovulation—is suspended.

In the ovary of pregnancy the energy thus conserved is expended on the maturation of the physiological corpus luteum, and the production of an internal secretion which, acting on the uterus, leads to the uniform and symmetrical hyperplasia of the muscular tissue of that organ.

In the ovary associated with fibroids the function of ovulation is also suspended, and the corpora lutea, instead of undergoing normal physiological changes, are found to be the seat of pathological changes: hence it seems not improbable that such ovaries may produce a pathological internal secretion, which, by a process analogous to that of the physiological secretion, acts on the body of the uterus in such a manner as to lead to an asymmetrical and irregular hypertrophy of the tissues of the uterine wall.

Both physiological and pathological secretions exhibit a similar selective capacity, in so far as they both act, as a rule, on the tissues of the body as distinct from those of the cervix. They differ, however, in that while the physiological secretion acts most markedly on the muscular tissue, the pathological produces most effect on the connective tissues.

In conclusion, I need hardly say that while the changes found in the ovaries associated with fibroid tumours appeared so definite and so relatively uniform as to justify my bringing the subject under the notice of the Society, I do so entirely in the form of a preliminary communication. Further, I put forward the suggestion of a pathological internal ovarian secretion merely as one which it seems reasonable to deduce
BY DR MALCOLM CAMPBELL.

from the facts observed, and which, if confirmed by a more extended research, would afford a logical explanation of the perivascular site of the primary fibroid growth. To attempt to formulate a definite theory is, for the present at least, quite impossible, and that for two obvious reasons.

Firstly, because the observations have been limited to twenty cases.

Secondly, because it is impossible definitely to state whether the ovarian conditions described are prior to and therefore probably causative of the fibroid growths, or are merely secondary changes induced in the ovary as a result of the presence of a uterine fibroid.

REFERENCES.


Professor Simpson said it was very important to get their minds directed—as had been done in Dr Campbell's interesting paper—to the region of tumour development. If they could get at the initial tendency to the growth of tumours, they might be able to treat them so that they need not come under the knife. Chemists were now making preparations from the glands that produce internal secretions that seemed to be counter-active to the development of neoplasms of various kinds. The relationship of the ovaries and uterus should be looked on as mutually influential even to the development of the diseases of one or the other. Twelve years ago, Bulius pointed out the constancy of degeneration of the ovaries in fibroid disease. The ovaries were enlarged and microscopically the tendency was mainly due to the over-development of the stroma and degeneration of the follicles. In preparations he (Professor Simpson) had shown to the Society, he had indicated the
tendency to cystic degeneration of the ovaries in connection with uterine fibroids, but it was difficult to know which was primary and which was secondary. Dr Campbell suggested that the ovarian disease was first, and their morbid action on the uterus caused fibroma; but the ovary and the changes occurring in it were regulated by changes in the uterus, and *vice versa*. The importance of the subject lay not merely in a direct scientific observation; but if they could recognise the change in the ovarian secretions that was going to modify the character of the uterus, they might get from a healthy ovary a countering anti-toxin. That was still one of the obscure regions that required observation and research.

*Dr Haultain* said he had listened with great interest to the paper. They were fully aware that the primary origin of fibrous tumours was perivascular. The character of the tissue and its disposition absolutely proved that. He would like to know if Dr Campbell had found healthy ovaries in fibroids. The question of "what was a healthy ovary?" was very important. If they could settle that question they would be able to advance in a number of directions, e.g., as regards the indication for their removal, and also their effect on the uterus. It was certain that the ovary had a direct effect on the uterus; one atrophied with the other. The idea of an internal secretion seemed to be proved, but he thought the first thing to be settled was the question of the healthy ovary.

*Dr Ballantyne* said they must remember it was held that there was also an internal secretion from the placenta, and it was supposed that during the reproductive period the secretions balanced each other and so counteracted any ill effect of either. The unbalanced action of the ovarian secretion would be harmful. The ovarian secretion acted by preventing the uterus going back to the infantile or passing on into the senile state. The placental secretion helped the nutrition of the uterus and other parts. He considered that
the investigation of the subject was a step forward along the line of discovering the ultimate cause of tumour growth. The paper was of great interest.

Dr Haig Ferguson said the paper was interesting and suggestive. He had noticed the association of fibroid tumours and disease of the tubes and ovaries, and this was in his experience most marked in the large tumours. The disease in the ovaries was put down to hyperæmia and pressure from the large size of the fibroid. He asked Dr Campbell if there was any difference in the microscopic and macroscopic appearances of ovarian disease varying according to the size of the fibroid.

The President said he had listened with much pleasure and interest to the paper. They were glad when a gynaecologist took up a gynaecological subject from the scientific aspect. The change was quite refreshing. He hoped that Dr Campbell would pursue those researches and before long find something of permanent value.

Dr Campbell said, in reply, that healthy ovaries along with uterine fibroids seemed to be rare. In the twenty cases referred to in the communication, only four ovaries were considered sufficiently healthy to be left. He did not think there was any definite relative proportion between the size of the fibroid tumour and the amount of ovarian degeneration. He thanked the Society for their kind reception of his paper.

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MEETING VI.—MAY 10, 1905.

Dr N. T. Brewis, President, in the Chair.

I. The following gentlemen were elected Ordinary Fellows of the Society:—A. T. Gavin, M.B., C.M., Doonlea, Dunaskin; Alastair MacGregor, M.B., C.M., Stafford Lodge, Market Harborough.
II. *Dr Freeland Barbour* showed two *malignant ovaries*.

III. *Dr Haultain* showed—(a) a unique specimen of *calcareous fibroid* removed from an elderly woman. It existed for eighteen years without giving rise to any symptoms. One day sudden and severe abdominal pain came on, and then all the symptoms of strangulation. He recommended immediate operation, and found a large dark-purple fibroid—the condition being due to twisting of the uterus. There was also great discoloration of the uterus, tubes, and ovaries, far on towards gangrene. This was an extremely rare case of acute axial rotation of the uterus. (b) A *large ovarian dermoid tumour and Fallopian tube* removed from a pregnant woman. Both were of a deep brownish colour, due to chronic twist of the tumour pedicle. The Fallopian tube measured 3 inches in diameter at the infundibulum. The whole specimen resembled in shape a nautilus shell. (c) A *normal (?) ovary with rotation of its pedicle*. The ovary had become gradually enlarged, and showed all the signs associated with chronic infarction. The tumour was not unlike the spleen, and on section still more resembled it. (d) A *solid ovarian tumour*, with central cystic degeneration, due to twist of the pedicle. (e) A *cyclops fetus*, having no nose, and a small opening at the chin admitting a bristle represented the mouth. The specimen was interesting, and Dr Berry was going to dissect it. (f) Two examples of *velamentous placenta*. In one the cord was inserted into the membranes; in the other it reached the edge of placenta, where it gave off a large vessel which ran over a portion of the membranes and again joined the placenta. The tear in the membranes came close to the vessel, and if lower would have caused serious haemorrhage and probably the death of the fetus. (g) *An edematous tumour*, growing from the uterus, which was really myxoma arising *de novo*, and quite different from the ordinary degenerated
fibro-myoma. It grew from the left side of the uterus, and opened up the broad ligament and meso-sigmoid. The bladder was pushed downwards and backwards below the tumour, and the peritoneum was lifted up from the abdominal wall. The bladder was found on tracing the left ureter downwards. The tumour was of the myxomatous type described by Tait, and usually occurred in young women.

IV. Dr Lackie showed a soft and vascular fibroma removed from a patient of 36. It reached almost up to the umbilicus, and had grown very rapidly, eight months ago being only the size of a hen's egg. The patient was doing very well.

V. Dr J. W. Ballantyne showed an obstetric satchel in aluminium. Handles had been attached to both trays. The contents were similar to those shown in the last satchel. The lower tray could be used as a steriliser, and there was a cover to fit both trays.

VI. Dr G. F. Barbour Simpson showed for Professor Simpson a fibroid tumour of the uterus occupying the left corner. There was also cystic degeneration of both ovaries and of the right Fallopian tube. The vessels in the wall of the uterus were sclerosed.

VII. Dr W. Fordyce showed a degenerating fibroid, from a case of hysterectomy four and a half weeks after full-time labour.

VIII. CURIOSITIES OF CURETTING, SPECIALLY WITH REGARD TO CANCER.

By Sir Halliday Croom, M.D.

After the many papers that have been written on curettage of the uterus, and especially the exhaustive paper of Dr Ballantyne
some time ago, perhaps the last word has been said on the
subject; yet I think that there are some points which still
admit of a little discussion. I would not dream of entering
upon any question about the indications and method of curettage,
but only introduce some cases where unusual and unexpected
results have taken place. My desire is to draw attention to
some of the difficulties and accidents occurring in curettage;
first, in regard to diagnosis of cancer; secondly, in regard to
some of the accidents, such as perforation; and thirdly, with
regard to unexpected and unfortunate results.

First, with regard to cancer, it is impossible for one to
read, far less to give a précis, of the various opinions that have
been held with regard to the causation of cancer. It is some-
what remarkable to observe that, though no subject perhaps
has received so much attention from pathologists and clinicians,
and though innumerable theories and suggestions have been
offered, the views advanced thirty years ago are still in the
main those that occupy the field.

Mr Morris, in his brilliant and charming Bradshaw Lecture,
crystallises the matter thus: "It has been unquestionably
proved that the tumour germ theory accounts for the origin
of many varieties of benign solid tumours, and all dermoids
and other cystic tumours, and we must now try and answer
the question with which we are specially concerned. Does it
not afford the true explanation of the etiology of malignant
tumours also? In attempting to reply to this question, it
may first be pointed out that regions and organs from which
embryonic inclusions are specially likely to occur are also
common situations of primary malignant disease. To realise
the truth of this statement, we have but to recall the frequency
of sarcoma near the ends of long bones, the occurrence of
myeloid and periosteal sarcoma and epithelioma in the upper
jaw, and carcinoma of the uterus, oesophagus, stomach, rectum,
tongue, and mouth. In the lip, the line of junction of the
skin and mucous membrane is the commonest seat of carcinoma; in the rectum, the parts at or near the junction of the skin and mucous membrane; in the stomach, the pylorus is the chief seat of carcinoma. Such anatomical areas as those just mentioned, like the cervix uteri, are zones of transitional epithelium, and are provided with glands not always of normal functional perfection. In these so-called cancer belts we may expectantly look for tumour germs in the form of isolated congenital nests of embryonic cells."

Though the most ardent advocates of this "tumour germ" theory cannot claim that its proofs are such as to allow us to accept it, in its present form at least, as the absolute explanation of the causation of cancer, still, as Mr Morris has very fully pointed out, this is so far the only theory advanced which, while it escapes some vital objection, explains satisfactorily most of the phenomena of cancer; while, from my point of view, as a clinician, I regard it as one of the theories which gives the operator by far the most hope.

Greatest amongst the initial difficulties in dealing with every case of cancer, but especially with uterine cancer, is unquestionably the difficulty of its early recognition.

Cancer of the uterus is so prevalent, that nearly all general practitioners see at least two or three cases yearly, and it is upon the family physician that we must rely to recognise the early symptoms, and to indicate to the patient the appropriate treatment. Without his assistance, the gynaecologist will almost invariably see the case only when the disease is too far advanced to admit of complete removal of the morbid growth. I think the profession is quite alive to this, and quite alive to the fact that every case should be dealt with immediately a diagnosis is made; but unfortunately the public are not yet educated up to this point, and therefore, alas, the majority, quite the majority, of cancers, especially uterine cancers, only present themselves to the medical practitioner, and afterwards
to the specialist, when, if surgical interference is not absolutely contra-indicated, it offers little chance of even a temporary cure. It must, of course, be that amongst the better educated of our clientele, sometimes signs will be recognised earlier, and have importance attached to them, which amongst the poorer or less educated will not be observed. My own experience of uterine cancer bears this out fully. From a considerable experience of vaginal hysterectomy for cancer, by far the majority of my patients have been private cases, and only quite a negligible quantity were hospital cases, these latter coming to hospital or being sent there when operative interference was hopeless.

Perhaps there is no form of cancer which is less early recognised than this uterine cancer. Mammary cancers, and cancers of all the other various organs of the body, in whichever sex they may occur, are as a rule early seen, and early operated upon; but uterine cancers, giving rise as they do to indefinite pains and discharges and hæmorrhages, are, amongst the common people at least, neglected. I am afraid that this applies to all classes of the community. Certain it is that in an experience of fifteen years in the Royal Infirmary in Edinburgh, I kept a strict list of all my cancers, and I think I am safe in saying that in these fifteen years not more than five patients presented themselves at a period of the disease which gave me the least encouragement to operate.

A very grave responsibility lies at the door of the medical profession for the small progress made in the early diagnosis of uterine cancer and its successful treatment.

Perhaps the earliest amongst the early symptoms to which one attaches importance is hæmorrhage, where it is slight after coitus or the introduction of any instrument. This, I take it, is about as early a symptom of cancer as ever appears. As illustration, let me here give a very striking example of what I refer to.
Case I.—A well-educated nurse, a widow, and a woman of very large experience, of 47 years of age, came to me one afternoon, and insisted upon my examining her to assure her that there was nothing wrong with her uterus. I did so most carefully, and assured her that there was nothing wrong whatever. The uterus was movable, with only the slightest possible loss of epithelium on the anterior lip, but there was nothing further. I tried to assure her this was the case, and asked her why she suspected anything wrong at all; and she said that on using the vaginal douche two days previously, there had been a little hemorrhage. Nothing would satisfy her but that I should curette her uterus in the ordinary way, and send the débris to the microscopist for examination, and, to my great surprise, I was told that the specimen showed squamous epithelioma. A second examination followed, and two days afterwards I removed her uterus by hysterectomy, and found in the cavity of the cervix a further indication of cancer. This is certainly the very earliest case that ever came within my knowledge, and shows the great clinical importance that must be attached to early hemorrhage and early curetting, and I may add that this is the most successful vaginal hysterectomy I have ever performed, as the patient is still living, years after the operation.

There is a further point on which I should like to say a word, namely, that all too frequent mistake of underrating the significance of hemorrhages at or near the menopause. It is quite true that the menopause manifests itself in various ways, and specially by hemorrhage, but it is quite certain that all post-climacteric hemorrhages ought to be regarded with the utmost care; and I do not think that any considerations of delicacy should interfere to prevent the practitioner who is consulted by a patient with a hemorrhage after the menopause, from making a local examination, and, if need
be, taking a scraping of the uterus. These hæmorrhages late in life, although they are not always malignant, are always suspicious. Though they are sometimes due to the recrudescence of a fibroid, and sometimes to gouty conditions, yet I think no practitioner does his duty by his patient, be she married or a virgin, without settling the question, and being thoroughly satisfied that the condition is not malignant.

We are all aware of the occurrence of senile uterine catarrh, which is sometimes a condition entirely per se; but, at the same time, malignant conditions ought in all cases to be rigorously excluded here also, because in some of these cases the catarrh is an early symptom of cancer. Perhaps there is nothing brings greater discredit on a practitioner than to undervalue a post-climacteric hæmorrhage and to temporise until the patient goes to a specialist, who recognises the condition, and, however much he may endeavour to protect the practitioner, is bound to tell the truth.

In this connection I would like to draw particular attention to the frequency with which malignant disease begins, or at all events progresses, after labour. It would drag this paper beyond all reasonable limits were I to refer to cases in point in detail, but I should like to point out here that over and over again, both in private and in the hospital, I have met with women who have been recently confined, or have recently aborted, and who have complained of hæmorrhage for weeks afterwards, and when local examination came to be made it was found to be malignant disease. With practitioners it is frequently the case that a woman after labour is allowed to have hæmorrhages, small in character, for many weeks, without any investigation being made. For my own part, I am quite at one with the American authorities who insist on making an examination periodically after confinement, so as to note the appearance of any lesion that may have followed labour. Kelly advises that every woman after
40 years of age, with a laceration, should be yearly examined with this object; and Stone advises that all women in whom we have reason to expect the occurrence of cancer should likewise be examined.

I have no intention whatever of embarking upon an essay on cancer, and I do not presume to speak here of the remarkable work of Doyen with regard to cancer, and his discovery of the micrococcus neoformans, because that really has nothing whatever to do with the question of curettage. Nor do I wish to speak of the question of hysterectomy for cancer, because I think—notwithstanding the adverse criticism that was offered to a paper I read some years ago—most men are of the opinion now that, except in very exceptional circumstances, hysterectomy for cancer had best be left alone; but there are two points in diagnosis which I think worthy of a moment's consideration.

Of all the signs of cervical cancer, there is none perhaps so classic as that condition where one finds the cervix broken up and lobulated, bleeding freely on touch, and so friable that pieces break away in the fingers. Three such cases it has been my fortune to see. The women who suffered were all relatives of members of the profession. In each of these cases, though apparently to the touch beyond any possibility of operation, and beyond any possibility of doubt as to the nature of the case, when curetted and subjected to the microscope they showed no indications of malignancy whatever, and all these patients are alive. I put this statement on record, not because I want to undervalue the importance of these signs, but in order that I may impress upon you how important it is to subject everything that you find in this way to the microscope. Not only is this necessary in what seems an obvious condition, as in the cases I have described, but in every case where the uterus is curetted for haemorrhages, I think it is of the utmost importance that
the tissues removed should be subjected to the arbitrament of the microscope.

It must strike everyone, after thoroughly analysing his own cases, how little room there is left for absolute symptomatology. The diagnostic symptoms are meagre, and give but small indication of the nature of the disease, hence the value of curettage when there is the slightest uterine haemorrhage which cannot be satisfactorily explained.

Let me give a striking example.

CASE II.—A patient in good circumstances was sent to me because she had had an incomplete abortion. She had aborted, or thought she had aborted, two months previously, and there had been more or less haemorrhage ever since. I gave the case very little thought, did what was obvious, curetted the uterus, packed and drained it in the usual way, and, as a matter of absolute routine, sent the débris of the curettage to my friend Mr Stiles for examination. I forgot all about the matter, and, to my great surprise, I had a letter from him saying that the specimen I had sent him was tubular carcinoma. I wrote and told him that he must be labouring under some hallucination, that he must be mixing up some other case, as the lady simply had an abortion. Nothing would satisfy Mr Stiles but a second curettage. This was followed by a similar result, and on that patient I performed hysterectomy a week afterwards. This patient’s uterus was perfectly freely movable. There was the slightest enlargement, but nothing to speak of. The broad ligaments that I put the clamps on were perfectly healthy, I thought, and there was no indication of anything wrong, and yet, on opening up the uterus, the fundus was found to be the seat of well-marked carcinoma.

Here, then, comes just the point, that as far as the micro-
scope is concerned it is difficult, impossible in many cases, to
distinguish between the ordinary cancer and the products of
pregnancy; the giant decidual cells complicate matters, and
many mistakes have occurred in my own experience through
this difficulty. I will cite one out of many.

Case III.—A patient, on whom I induced premature
labour, on account of extreme deformity of the pelvis, but
without being successful in delivering a living child, became
pregnant again, and I told her that she only had a choice
between having abortion procured at once and facing Cæsarean
section later. She preferred the former, and I dilated her
uterus, and again, as a matter of absolute routine, sent the
débris to the microscopist for examination, and received the
reply, "malignant." As the lady was a young woman in the
enjoyment of perfect health, and as the pregnancy had only
gone on a few weeks—three weeks at the outside—I was
sufficiently surprised, but a second examination from the same
authority gave the same report. Even with that, however, I
did not feel justified in operating. If the cancer was cancer
at all, it was fundal cancer, and I thought she could well
wait for a month. She went to London, and was there seen
by a colleague, who again scraped the uterus, subjected the
débris to the microscope, and was told there was nothing
at all.

One illustration further.

Case IV.—Some years ago I was asked to see a lady who
had been bleeding for some two or three weeks, and who
suffered in the middle of the night from profuse hæmorrhage.
Finding the uterus slightly enlarged, and apparently containing
no foreign body, I curetted and packed it. She was in the
hands of a medical friend, and I did not see her again. Having
sent the products for microscopic examination, I was very much surprised to find, a week afterwards, that the report of the microscopist was that there was cancer. I wrote this to my friend the doctor, and advised him meantime to say nothing to the patient on the subject whatever. I never heard of the patient again till some years afterwards, when I was asked to take her down to dinner.

It seems to me that in sending these specimens to the microscopists some notes of the clinical history of the cases should always accompany them, and I now, in submitting scrapings, etc., for microscopic examination, send with them, for the guidance of the pathologist, a report of the condition of the patient from whom they have been taken. I think this is a most important point. It is unfair to the microscopist, and unfair to the patient, to send a mere scraping without a full and careful clinical history of the case as well. In this way, and in this way only, can mistakes, and very serious mistakes, be avoided.

When the cervix presents a suspicious appearance, a wedge-shaped piece is excised, but where symptoms of carcinoma of the body are present, the body is curetted.

In curetting the uterus, it is important that the scraping should be done thoroughly, both laterally and anteroposteriorly. If this thoroughness is not insisted upon, it may happen that, in the case of an early carcinoma, the diseased tissue may be left untouched.

Even the microscope, as I have already shown, is not always absolutely reliable, and even with this means of diagnosis there are obvious sources of fallacy.

The following case is instructive.

Case V.—The patient was sent to me from the country, with constant haemorrhage, and a very fetid muco-purulent
discharge. Local examination revealed a cervix of the usual length, but somewhat patent. On the introduction of the finger through the os, a rough mass was felt, which bled on touch. A small scraping was made and sent to be examined by the microscope, with the query, "Is this malignant?" and the answer was, "Yes." I removed the uterus by hysterectomy some days afterwards, and found there was no trace of cancer whatever, but only a fungating polypus.

Now the question comes to be, under what circumstances are the microscopical mistakes likely to be made? and although I do not profess to be proficient in the use of the microscope, I think I may put them down as follows. The sources of error may be grouped under two headings:

1. The presence of decidual cells.—These may be met with in two classes of cases—(a) Imperfect abortions; (b) endometritis after childbed. In the first class the decidual cells are met with in clumps, enclosing chorionic villi, which guard the microscopist from mistaking them for cancer cells, which they individually very much resemble. Further, the true alveolar arrangement of cancer is not found. In the second class of cases, the decidual cells are found in small clusters mixed among much glandular tissue. The latter is a reproduction of normal endometrial cells; the former may suggest cancer. The isolated islands of the squamous cells, however, never show a proper alveolar arrangement, and their scattered distribution, with an increased formation of what looks like otherwise normal endometrium, would not justify a diagnosis of cancer, even in the absence of any record of the history of the case.

2. The presence of glandular endometritis.—This has certain resemblances microscopically to columnar-celled epithelioma of the cervix. A differential diagnosis can always be made when the following points are attended to:—(a) The great increase
in the number of the glands. This is seen both in cancer and glandular endometritis, but in the latter the increase consists of glands of much the same thickness, with a definite thickness of interstitial tissue between; while in cancer the glands vary in thickness and shape, and show very little interstitial tissue between them. (b) Branching in glandular endometritis is usually dichotomous, and in cancer it is irregular. (c) The cells lining the glands in the former form a single layer of normal-looking endometrial cells, except in places where the section is oblique, while in the latter they often form several layers. The course taken by the glands, too, is of importance. In the glandular endometritis, the glands often show a spiral, or even in places a sharp-angled bend, but they go mostly perpendicularly to the cervix; in the latter they are much more irregular, and run anywhere, obliquely, transversely, or vertically. And lastly, with regard to invasion of the muscular coat of the uterus, this occurs in endometritis as well as in cancer, and cannot be very much relied upon.

To these difficulties, of course, there must be added at the same time the fact that a great many specimens of curettings are given to microscopists without any report whatever. Now, in any case submitted for examination for cancer, the clinical history of the case should be given as well; but given the clinical history of the case, and if sufficient care is taken, I think that most pathologists will be prepared to admit that, if the curettings in each case be ample, and all embedded together for microscopic examination at the same time, even with the slight possibility of mistake, so far as I know, microscopic examination is the only thing upon which we can rely.

The only method of dealing with a suspicious cervix, short of histological examination, is that of the test of sulphate of copper. This was first described by Heitzmann some years
ago:—If a pledget of cotton-wool soaked with a 20 per cent. solution of sulphate of copper be applied for a minute or two to a suspicious erosion on the cervix, the cervix will become quite blanched if it is an ectropion; if it is a simple erosion, a thin bluish-white coating will form without hæmorrhage. By repeating this once or twice, the erosion will heal. It is otherwise if the erosion be cancerous. It will then bleed profusely, and bleed on each successive application.

I have no wish to pursue the subject of cancer further, but let me refer now to a case of acquired atresia after curettage.

**Case VI.**—The patient came to me with menorrhagia. There was no evidence of any fibroid or neoplasm of any kind, simply a somewhat enlarged uterus. I did the operation and applied the usual iodised phenol. She had been married for some years, and was sterile. She went to her home in Kelso, and wrote to me afterwards to say that she had not menstruated since the curettage—that is, for two months—and she was very pleased to know that she was now pregnant, mentioning at the same time that she had suffered very severe pain at the time corresponding to each menstrual epoch. I was asked later by her doctor to see her in Kelso, the pain having become so extreme with no hæmorrhage at all. A miscarriage was thought of. As the pains were violent, she was placed under an anaesthetic, and examined. I dilated her cervix with difficulty, as the canal was quite occluded, and found there was no indication of pregnancy whatever, but only a large accumulation of menstrual blood. In this case the uterus was scraped, and the contents subjected to the microscope, but no trace of pregnancy was found, nothing but blood-clot.

Why the stenosis occurred in this particular instance I do not profess to say, except that there had been perhaps a rather too profuse application of the phenol to the cervix, or the
phenol had been unusually strong, and that there had been some considerable endocervicitis as well. I need scarcely say that the dénouement was a very great disappointment to the patient, and she has remained sterile to the present time.

Now, with regard to cases of perforation.

Case VII.—I was called to Perthshire to see a patient with a medical man, some years ago. He had used the curette to remove the remains of an abortion at four months, and had perforated the fundus uteri, and when I saw the case, there was a large knuckle of bowel protruding through the orifice in the fundus, down through the cervix. I had some difficulty in recognising the nature of the case, but after doing so I pushed the bowel back through the orifice, through the cervix and through the fundus, and packed the body of the uterus full with iodoform gauze, and, much to my astonishment, the patient made an uninterrupted recovery.

Perforation of the fundus uteri unquestionably happens occasionally in curetting and allied operations. I am not sure that the perforation does not occur quite as often by means of the dilators as by means of the curette. I have seen it occur in both circumstances, and never, except in the case I have already referred to, have I seen any serious results. If everything is done with the utmost antiseptic care, very seldom any untoward accident occurs. The fact is, that the main reason why the uterus may be perforated aseptically by the curette is that the interlacing muscular fibres coming tightly together soon close the aperture in the uterine wall. The greatest risk, of course, is incurred in curetting the uterus for septic cases after labour, for if the curette is sharp enough to do any good, it may cut grooves in the softened uterine tissue, and thus open up the lymphatics and promote absorption of toxin; and the fact is that in puerperal cases the
finger makes the best curette, whether pieces of placenta are left or not, provided washing and draining are thoroughly carried out as well. Of course perforation of the uterine wall by the sound is really of no importance at all, because if the sound be clean, the uterine fibres contract so firmly that no untoward result is ever likely to occur. I have met with this accident over and over again without any bad results whatever.

Although in this country there are no records of cases of this sort being attended with serious consequences, such is not the case in America and the Continent. In an interesting paper by Hessert, he records a case of curettage in which there was injury to the bowel which necessitated resection of 4 ft. of intestine; and numerous other cases are recorded in American, German, and French literature where curettage of the uterus has been followed by perforation of the uterine wall, and death from sepsis. Such a case as this is recorded, where Dr B. Harvey, quoted by Kelly, after dilating, passed a pair of forceps to catch the ovum, and drew out and cut off 6 ft. of bowel, without realising what he had done. Kelly records another case where a medical man attending an abortion used dilators and placental forceps, and pulled down the gut, and went on pulling until he had about 6 ft. of it out, under the impression that it was foetal intestine. He cut off the gut and sent for help. Needless to say the patient died. Van de Warker reports a case where, after curetting, a piece of bowel was torn across, 4 in. incised, the Murphy button introduced, and needless to say the patient died. And quite a number of cases are recorded where this accident occurred, and where afterwards the abdomen was opened and hysterectomy performed. These cases of accident are not recorded, to the best of my knowledge, in this country perhaps because here we are not always in the habit of recording our mistakes.
Before concluding this paper, I would like to refer to two somewhat exceptionally curious results of curettage, namely, where the operation had the very opposite effect of what was expected. In most cases of sterility, curettage is undertaken to obviate the hyperæmia and hyperæsthesia of the endometrium, and in both the cases to which I am going to refer hyperæmia and hyperæsthesia were both present, but the result was the direct opposite of what was expected. The cases are as follows:—

Case VIII.—A young married lady, æt. 25, profuse menstruation and marked metrorrhagia, supposed to be the result of a miscarriage, of which, however, I am not certain, was sent to me. I curetted her uterus in the ordinary way, applied an escharotic, and drained. That was five years ago, and since then she has never menstruated at all. I have examined her time after time, and found the uterus diminished in size, something less than 2½ in., but no other change that I know of perceptible. She is otherwise in perfect health. The case, of course, has been a very distressing one, because the patient has lost all power of menstruation, and become absolutely sterile, bringing about the event that I wanted to avoid.

Case IX.—The patient, æt. 40, who had only recently been married, had a miscarriage of three months. The miscarriage was incomplete. She had bled for two months after the miscarriage was over, and was sent to me for treatment. The obvious thing was curettage, which I performed in the ordinary way, with the result that she never menstruated again; the result being, of course, an endless source of annoyance, because pregnancy was to her an important matter, and her menopause has apparently been induced by this interference.

I do not venture to offer a definite explanation of these two cases. They are both very striking and very painful, but it
seems to me that the explanation is to be found in the unsatisfactory condition of the endometrium. In both cases the endometrium was thick, villous, succulent, and soft, and perhaps a larger amount of mucous tissue was removed than necessary, and the question comes back as to how the endometrium is reproduced. That brings us back to the old question of how much of the endometrium is lost at every menstrual period.

The striking thing, however, about these two cases, so far as the physical examination is concerned, is that the ovaries, which were distinctly palpable in both cases, became in both cases diminished in size.

It is well known that while interference will sometimes bring about a menopause unexpectedly, mental troubles will also do it, and it is just possible that in these two cases, the shock, if there was such a thing, of the curettage, may have been sufficient to affect the ovaries.

With regard to the second case, one thing is to be noted, that in the patient's family on both sides there is distinct history of phthisis, and it is quite possible that the early development of the menopause may have been due to a condition of superinvolution, which is associated with it.

Perhaps there is no gynaecological operation which is so frequently and successfully performed as curettage, yet, in view of the facts that I have just adduced, it is well to keep in mind that curettage is by no means free of accidents, and must in all cases, especially puerperal cases, be undertaken with extreme care; and in any case, whether puerperal or not, the possibility of an untoward accident must be kept carefully in view. The operation is so easy, and in most cases so safe, that I venture to hope that such a caveat such as I have just entered may not be without some value.

Dr. Ritchie said he had listened with much interest to a very important paper. He agreed that cancer was not due
to micro-organisms. It was a great pity that so many cases of uterine cancer were not recognised earlier. They must do their best to recognise the disease as early as possible. Irregular hæmorrhages in a woman called for very careful inquiry. In a married woman there was the difficulty that the products of conception might be mistaken for malignant disease. Where the uterine scrapings were suspicious, they should wait for a month or two, and if there were no irregular hæmorrhages cancer might be excluded.

Dr Haultain said he was much interested in the paper, but considered that its scope had gone beyond its title. It was a paper on cancer. There were two questions he would like answered. In Sir Halliday Croom’s statistics, 13 per cent. of nulliparae had cancer. In his own experience he had only seen one case, and men like Emmet had never seen a case. There were many authorities of the same opinion, and he would like to know whether Sir Halliday Croom’s own experience corresponded to the 13 per cent., and whether members of the Society found it so. In diagnosis of cervical cancer he agreed with Sir Halliday Croom as to the value of microscopic examination of scrapings. A valuable diagnostic point was the peculiar friable condition of the cervix when touched with the curette. In cervicitis, on the other hand, the curette brought away very little tissue. With regard to the differentiation of early abortion, he did not think decidual cells resembled cancer though they might be mistaken for sarcoma. They found the plasmodial cells of the chorionic villi and giant cells, and, as a rule, there was little difficulty in making a diagnosis of early abortion from malignant disease. He, like Sir Halliday Croom, had seen two or three cases where women ceased to menstruate after curetting; one in a patient of 33 years. With regard to curiosities of curetting, he was once called to a case where the doctor had curetted for abortion. He had removed an early ovum, and then
pulled down what seemed to be the ovary. He tied a string round it and cut it away, and packed in half a pound of cotton wool. When he (Dr Haultain) saw the case, patient was very collapsed. He opened the abdomen, and came down on the half-pound of cotton wool. The uterine artery was spouting. He did hysterectomy, and the woman recovered.

Dr J. W. Ballantyne said it was not always wise to assume that the uterus was perforated when the sound or curette passed in too readily, for, with the sound, the instrument might have passed into a tube, or when in one horn of a double uterus might have perforated the septum and passed into the other horn. Then the Germans considered that considerable inertia might occur even in the non-pregnant uterus, increasing the size of the organ, and allowing the sound to go in further. He would like to know what Sir Halliday Croom's line of treatment was in such cases, for it seemed unnecessary in many cases to proceed at once to operation. In curetting the septic uterus, the use of the finger might be dangerous to one's self and to one's other patients. Rubber gloves, perhaps with an artificial nail for scraping, might be used. With regard to the causation of cancer, he knew from his work on antenatal pathology many ways in which embryonic cells could get into the fetus, e.g., syncitial cells from the chorion; but the great difficulty was to get any explanation why they lay dormant for, say, forty years. It was difficult to explain why they only took on activity then.

Dr Church said it was a great pleasure to have a paper from Sir Halliday Croom: his experiences were always useful to them. Two years ago he had brought before the Society a paper on the etiology of cancer of the uterus. He tried to bring forward evidence to show that rapid child-bearing in the early part of the reproductive life and superlactation might, at the menopause, be followed by malignant disease.
Possibly the uterine and mammary tissues had been exhausted and become reduced to the embryonic conditions in which the cancer plasm was more likely to grow. Cases he saw seemed to bear out that idea. Dr Church wished to ask Sir Halliday Croom if he thought curetting of the uterus might be responsible, in after years, for the inroad of malignant disease. Whether in this operation an injured, and consequent lowered resisting power of the uterine tissues, might not be brought about? He referred to Paget's disease, where inflammation of the nipple and of the areola was sometimes followed by cancer of the breast. And as an instance of enfeebled or injured tissue taking on malignant disease, he spoke of the tendency of a tissue of lowered vitality, such as the connective tissue of a cicatrix, being specially liable to the inroad of cancer. He thought that a breast or uterus after excessive function through the child-bearing period might present tissue at the climacteric period similar to the tissue of a cicatrix, or, at least, a tissue of lowered or unstable vitality. Recent official reports showed that cancer was common in India and the East. On the above line of reasoning we should expect this to be the case in countries where lactation is sometimes prolonged to five years. In our cancer hospitals Dr Church thought it would be important to inquire, in the case of women, whether there had been excessive child-bearing, and very especially if there had been, at any period of the reproductive life, overlapping of lactation and pregnancy. This was an inquiry which was practically never made in our institutions.

Dr Haig Ferguson said he had listened with much interest to the paper. He thought the profession was fully alive to the importance of the early diagnosis of cancer. In his opinion nurses should be carefully taught the earlier symptoms of malignant disease. That would bring cases sooner to the surgeon. He had seen two cases of amenorrhea
following curettage. The patients were fortunately quite pleased about it. With regard to perforation of the uterus, Sir Halliday Croom was the first to clearly demonstrate that perforation could occur without doing any harm.

Dr Dewar said he was pleased to hear such an excellent paper. He agreed in the remarks made of practitioners overlooking the early stages of cancer. He endorsed every word that Sir Halliday Croom said about the absolute necessity of practitioners making a point of examining all cases of suspicious uterine haemorrhage.

Dr Lackie said he had seen a case where curettage accomplished more than was expected. On the third day after abortion, a patient's temperature went up to 105 one night, coming down in the morning. Nothing was found locally, but the temperature continued to swing. A week later there was distinct effusion in the pelvis, and he therefore curetted the uterus, but very little material came away. The mischief was not in the uterus, but it was remarkable that the temperature never rose again, and the effusion disappeared within three weeks. In acute deposits in the uterus it seemed a good plan to curette the uterus. He had listened with much interest to the paper.

Sir Halliday Croom thanked the Society for the kind words they had used about his paper. He had seen dozens of cases of cancer with untorn cervix. Most cases have laceration, yet many had cancer without torn cervix, or without having borne children. In the latter instance the number was from 10 per cent. to 13 per cent. He did not think the test of friability of the cervix as diagnostic of cancer could be depended on. Many cases were friable that turned out non-cancerous. He had seen two friable cases treated in London for cancer and returned as cured, but when scrapings were subjected to microscopic examination they were found to be "innocent." It had never been
proved that the uterine sound could enter the Fallopian tube. Sometimes curettage did injury to the uterus. He had seen cancer develop in a uterus after curettage. He thanked the Fellows very much for the way they had received his paper.

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MEETING VII.

The Seventh Meeting was a conjoint meeting with the Glasgow Obstetrical and Gynaecological Society, and was held in Glasgow on 21st June, Dr J. K. Kelly in the Chair. Dr Cullingworth, the Honorary President of the Glasgow Society, opened a discussion on "The Secondary Operation for Complete Rupture of the Perineum." After the discussion, the Fellows of the two Societies dined together in the Windsor Hotel, Dr Kelly in the Chair.

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MEETING VIII.—JULY 12, 1905.

Dr N. T. BREWIS, President, in the Chair.

I. The following lady and gentlemen were elected Ordinary Fellows of the Society:—Edith Cochrane-Brown, M.B., Ch.B., Strathmore, Ferry Road, Christchurch, New Zealand; Edmund Frost, M.B., C.M., Chesterfield, Meads, Eastbourne; James Brownlee, M.D., Stockton-on-Tees.

II. The following gentlemen were elected Honorary Fellows of the Society:—Professor Zweifel, Leipzig; Professor Veit, Halle; Professor Sir William J. Sinclair, Manchester.

III. Dr Brewis showed—(a) LARGE FIBROMA OF THE OVARY;
EXHIBITION OF SPECIMENS.

(b) LARGE MALIGNANT TUMOUR OF THE OVARY; (c) OVARIAN TUMOUR, associated with ascites and pseudo-myxoma of the peritoneum; (d) PAPILLARY OVARIAN CYST, associated with fibro-myomata of the uterus; (e) PYOSALPINX AND SUPPURATING DERMOID TUMOUR, from the same patient; (f) UTERUS removed by vaginal hysterectomy for cancer of the cervix; (g) INTERSTITIAL FIBROID TUMOUR removed by myomectomy; (h) VARIOUS FIBRO-MYOMATOUS TUMOURS OF THE UTERUS.

IV. Dr Ballantyne showed—(a) A UTERUS, the seat of a cervical fibroid, removed by pan-hysterectomy. The patient had worn a pessary for two years, and the cervix and tumour had grown down through it. She suffered from severe pain. The uterus with the tumour was successfully removed. The right ovary was cystic and had a large corpus luteum. (b) A TUBE AND OVARY, and a TUBE, removed for excessive pelvic pain and vomiting at the periods. The case had been diagnosed as a gastric ulcer. The operation was successful in relieving the symptoms.

V. Dr Haultain showed—(a) A UTERUS, the seat of fibro-myomata, associated with a large double hydro-salpinx. The preparation was interesting, as by injecting the distended tubes with warm gelatine, which afterwards solidified, the size and contour of the tumours were retained. (b) A UTERUS WITH LARGE FIBROID TUMOUR, and with a fibrous tumour of the infundibulo-pelvic ligament undergoing oedematous degeneration. The microscopic examination revealed fibrous tissue and spaces filled with fluid.

VI. Dr Barbour showed AN OVARIAN CYST removed per vaginam, which had obstructed labour. The cervix was partly dilated, and the head was prevented from descending by the tumour. Dr Kelly removed the tumour per vaginam. It was very vascular, and considerable bleeding took place. The child was then delivered by forceps.
Dr Kelly (Baltimore) in making remarks on Dr Barbour's specimen, thanked the Society for the cordial welcome it gave him. He was proud of the honour of counting himself one of its members. He was much interested in the case described by Dr Barbour, but his experience in recent years was not obstetrical, but rather purely gynaecological. The patient was in active labour, and the cervix opened up to the size of a dollar. The tumour was pushed down into the pelvis and impeded the descent of the head, which had not engaged in the superior strait. The tumour was cystic: with Dr Barbour's assistance he made an incision in the vaginal roof. There was marked varicosity of the veins of both thighs and of the vaginal walls, which were very blue in colour. He incised the vaginal wall and free bleeding occurred. After evacuating the cyst, the wound was enlarged, and he proceeded with the enucleation, which turned out to be very difficult. The limits of the tumour were hard to find, but he got it out with difficulty after transfixing and tying the short pedicle. Considerable oozing of blood took place, which was difficult to control, owing to the laxity and collapsing condition of the tissues. During the operation he felt another prominence like a subsidiary cyst, which he thought of evacuating, but on making a bi-manual examination the swelling was found to be a part of the uterus itself. That was an interesting and important point. There was difficulty in catching the bleeding points and in stitching the wound edges. Iodoform gauze was inserted through the vaginal wound, and the vagina packed with gauze. He considered it would be better to expose the tumour more fully and control all bleeding before going any further. He was thankful to Dr Barbour for the experience and the lessons he had learned.

VII. Dr Fordyce showed a very marked marginate placenta. The case was associated with very considerable
post-partum hæmorrhage, which was common in such cases. The child was premature (seventh month), and born dead.

VIII. Dr Simpson Fowler showed a succenturiate placenta, with one large detached placental lobe and several smaller and more fibrous masses. It looked like a multiple placenta.

IX. Dr Barbour Simpson showed—(a) Large cystic ovarian tumour, with torsion of the pedicle. Acute abdominal pain came on suddenly, and persisted. Immediate laparotomy was performed, when a dark purple cystic tumour was found with its pedicle twisted three turns. This was ligatured and the tumour removed. The other ovary being cystic, was removed. Patient made a good recovery. (b) A tumour of the right labium removed from a girl of 16. It had been growing for three years, setting up considerable discharge and anaemia. It was removed by clamping and dividing the pedicle, and stitching up the raw surface with catgut. On section, the mass was found to have a gelatinous centre. The pathologists considered it a myxoma. (c) A cyclops fætus, which had one eye and no nose. It was a fifth child. Parents and the first three children quite normal, but the fourth child had eye sockets “lined by red flesh,” but no eyes. (d) A fætus showing cephalic deformities and amputation of the extremities and of the large toes.

X. A SERIES OF CASES OF AXIAL ROTATION IN ITS RELATION TO THE PELVIC GENERATIVE ORGANS.

By F. W. N. Haultain, M.D., F.R.C.P. (Edin.), Assistant Gynaecologist, Edinburgh Royal Infirmary; Examiner in Midwifery and Diseases of Women, University of Edinburgh.

As is well known, the abdominal pelvic organs, from their movable character, are liable to rotation of their attachments,
and it is indeed surprising that more examples of this complication are not met with. In my experience of pelvic-abdominal surgery, I have met with sixteen instances. In 14 of these cases the ovary was implicated, and 2 were associated with uterine growths. They may be tabulated as follows:—

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple ovarian tumours</td>
<td>12</td>
</tr>
<tr>
<td>Ovarian cyst with pregnancy</td>
<td>1</td>
</tr>
<tr>
<td>Normal ovary</td>
<td>1</td>
</tr>
<tr>
<td>Subserous pedunculated fibro-myoema</td>
<td>1</td>
</tr>
<tr>
<td>Rotation of entire uterus with interstitial fibroid</td>
<td>1</td>
</tr>
</tbody>
</table>

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Twists of the pedicle may, for clinical purposes, be considered under the following headings:—

(1) Acute permanent.
(2) Acute temporary.
(3) Chronic permanent.

Rotation of the pedicle must, in the main, interfere with the normal circulation of the affected organ, particularly by impeding the blood return, and thus give rise to all the conditions associated with venous congestion. This must vary in its intensity in individual cases, with the degree of involvement of the blood-vessels. It is thus possible, with a very slight twist to have acute strangulation, while multiple twists may in some cases only produce slight symptoms.

Thus, in a thick, fleshy pedicle, acute symptoms are much more liable to arise than in a long, narrow one, where the blood-vessels more readily accommodate themselves to the altered conditions. This is well exemplified in the case of axial uterine rotation, subsequently to be described, where a
two-thirds turn was associated with symptoms of intense strangulation; while in a case of solid ovarian tumour, with a narrow pedicle, which was twisted four times, acute symptoms were conspicuous by their absence.

The symptoms usually associated with rotation sufficient to give rise to acute strangulation, are characteristic. They consist of intense pain in the abdomen, shock, fever, and running pulse; in fact all the symptoms of strangulation of bowel, with the exception of stercoraceous vomiting. On the other hand, chronic forms of twists may be associated with none of the above-mentioned symptoms, and it is only on opening the abdomen that evidence of the condition is found. Pain, though frequently met with, may be entirely absent, though strong adhesions of the tumour to the surrounding structures are found, doubtless induced by the slight congestion and irritation which resulted from the twist. I have, on three occasions, met with this condition, where no history of pain could be elicited.

Case I.—Miss M., aged 50, had been cognisant of a large abdominal tumour for sixteen years, but it gave rise to no symptoms of discomfort. On the morning of 9th March 1905, she was suddenly seized with acute pain in the abdomen, and became very ill. As the symptoms had not abated by the afternoon, I was asked by Dr Sloan, her medical attendant, to see her. I at once came to the conclusion, from the pain and tenderness of the abdomen, elevated temperature (101·5°F.), and extremely rapid small pulse, with the presence of the abdominal swelling, that some acute complication had taken place in the growth, and suggested immediate laparotomy.

On opening the abdomen a large quantity of blood-stained ascitic fluid was evacuated, and a large, purple, hard, fibromyomatous tumour was found. This, on being pulled out of the abdominal cavity, was found to be closely attached to the
uterus, which was twisted two-thirds of a turn from left to right. Supra-vaginal hysterectomy was performed in the usual manner, and the patient made an uneventful recovery (see Plate).

The specimen shows the upper two-thirds of the uterus, with its appendages, and the tumour, to be in a state of complete strangulation, and of a dark purple colour. The tumour was situated in the anterior wall of the uterus, and on section was hard and calcareous.

CASE II.—Mrs H., aged 47, complained of a rapid distension of her abdomen, without any particular symptoms of discomfort. On palpation the abdomen was found to be filled with a large quantity of free fluid, and an exploratory operation was decided on. On opening the abdomen, 20 pints of blood-stained ascitic fluid were evacuated, and a small fibrous ovarian tumour was found, the pedicle being long and narrow, and twisted on itself four times. The tumour was removed in the ordinary way, with an absolutely satisfactory result.

Beyond some fulness of the peripheral vessels no great evidence of interference with the circulation through the organ could be noted, although the interior was broken down and formed a degeneration cyst.

CASE III.—Miss P. was sent to me by Dr McGregor (Jedburgh). She complained of constant uterine haemorrhage, which had been continuous for eighteen months. She was extremely anaemic (haemoglobin 33 per cent., red corpuscles 1,800,000). She had never suffered from the least pain. On examination a swelling was found in the hypogastrium, about the size of a small cocoanut. The sound passed behind the tumour into the uterus 2½ inches. On opening the abdomen an elastic bluish-white swelling was seen densely adherent to

[To face page 200.]
bladder, sigmoid, and surrounding structures. It was first taken for an ordinary ovarian cyst, and an attempt to evacuate its contents by puncture was made without effect. The growth was then freed from its adhesions, when it was found that its attachment to the uterus was twisted two and a half times, the tube being remarkably engorged and purple, though not much increased in size. On incising the tumour, after removal, it presented a homogeneous, glistening appearance, closely resembling the spleen, which it also simulated in size and shape. The right ovary, though somewhat enlarged, appeared normal. On microscopic examination the appearances presented were those of chronic infarction, as the entire substance was composed of vascularised fibrin, surrounded by a capsule of ovarian tissue. Since removal, the uterine haemorrhage has entirely ceased.

Case IV.—Mrs C., sent to me by Dr Mackness, of Broughty Ferry, had known of a small pelvic swelling, which had given rise to discomfort for four years. She suddenly ceased menstruating four months previously, and had for three or four weeks complained of very considerable pain in the lower abdomen. This abruptly became exceedingly acute, and demanded immediate interference. On opening the abdomen the uterus was found enlarged, soft, and purple in colour, and attached to its left side was a large brown mass. On its surface was an enormously hypertrophied tube, which at its distal extremity measured over 2½ inches in diameter. This was with difficulty freed from its surrounding adhesions, and the mass removed. It proved to be an ovarian dermoid, and the tube was found twisted little more than two-thirds of a turn. On the following day the patient aborted, but otherwise made an uninterrupted recovery.

On considering the above cases the marked varieties in the
clinical history become apparent. Case I. is a striking in-
stance of acute strangulation, and is of particular interest as
being an example of that extremely rare condition—axial
uterine rotation. So far as I can make out, no similar case
has been described before this Society. Indeed, the literature
shows the condition to be one of extreme rarity. A similar
case has been described by Homans (1), found at the autopsy
thirty-nine days after the onset of symptoms. Bland-Sutton (2)
describes a case of chronic axial uterine rotation and incarcer-
ation of a uterine myoma, due to the direction of the
tumour growth, while other examples are quoted—Pick (3),
Schwartz (4), Skutsch (5), L'Imbert (6), and Griggs (7). Though
extremely rare, this complication must be considered as another
distinct menace to life arising from a uterine fibro-myoma.

It is difficult to conceive how axial rotation of the uterus
can be possible, when its extensive attachment, by means of
the round and broad ligaments, are considered. Still more
difficult is it to explain how a two-thirds turn of the organ
should give rise to such acute strangulation, for, even if it be
admitted that the blood return through the uterine veins is
absolutely cut off, there are still the ovarian veins to reckon
with, which might be supposed to permit of a ready venous
exit.

Twists of the pedicle of subperitoneal fibro-myomata are
more common. An example of this I previously showed to
the Society, where, from the chronic torsion, no acute
symptoms were present, but marked oedematous degeneration
of the tumour resulted.

One cannot but think that slight temporary twists may
account for the occurrence of the severe paroxysmal pain met
with in patients, the victims of uterine fibro-myomata; and
they may also, in some instances, be the cause of degenerative
changes of the nature of infarction and oedema.

The appearances presented by Case II. lead me to believe
that one had to deal with a chronic rotation of the pedicle of
a comparatively normal ovary, in which, from the partial
blocking of the venous return, a slow process of infarction had
occurred, giving rise to great increase in the size of the organ.
I have been unable to find an account of a similar condition
described elsewhere.

Case IV. would appear to be a similar chronic rotation of
the pedicle of a small dermoid ovarian cyst, which had suddenly
become accentuated and acute by the coincidence of pregnancy.
The chronic congestion from a partial blockage of the circula-
tion, probably accounted for the enormous hypertrophy of the
Fallopian tube, which gave the mass the appearance of a
nautilus shell as regards shape.

Anyone having a large experience in ovariotomy must be
conversant with the conditions met with due to chronic twists
of the ovarian pedicle, which from its comparatively slight
interference with the circulation in the growth, appears to give
rise to only minor organic change, but sets up sufficient irrita-
tion to cause adhesion to the surrounding structures. Though
not necessarily associated with any special clinical symptoms,
the history of localised pain may be usually elicited. I have
met with eight examples of this chronic twist complication
out of a total of 270 ovariotomies.

Differential Diagnosis.—As has been already stated, the
symptoms of acute strangulation are well marked. They
may be, however, closely simulated by a large intra-cystic
haemorrhage, which may or may not be the result of interference
with the circulation. Intra-cystic haemorrhage is not, as a rule,
associated with fever, indeed, rather tends towards collapse,
and may thus, as a rule, be differentiated. Frequently, how-
ever, intra-cystic haemorrhage is a direct result of torsion of
the pedicle.

Acute twisting of the pedicle may also be simulated by
threatened tubal abortion, which gives rise to marked abdominal pain and tenderness associated with fever. The physical signs, in this instance, may be so similar that the differential diagnosis is extremely difficult, as a small ovarian tumour may easily be mistaken for a tubal gestation sac. The history in the majority of cases will help towards a correct diagnosis, but this cannot be depended upon. Amenorrhoea is by no means a constant sign of a tubal pregnancy.

The following case in this connection is interesting:—

Mrs B., age 37, multipara, last child five years old, menstruation regular, was suddenly seized with violent pain in the abdomen, sickness, and marked shock. Temperature subnormal, pulse rapid and small, and considerable pallor. To the right of the uterus, which was slightly enlarged, a small, well-defined swelling was found by bi-manual examination. Ruptured extra-uterine pregnancy was diagnosed, and immediate laparotomy performed. The peritoneal cavity was found filled with blood, and a small, twisted, ovarian tumour was recognised, with a ruptured vein in the pampiniform plexus.

Many theories have been advanced as regards the causation of twists of the pedicle. These I feel incompetent to discuss. There can be little doubt, however, they are particularly liable to occur when the growths are associated with pregnancy and labour, which is natural to expect from the ever-changing relation of parts due to rapid increased growth of the uterine tumour. Be the causes what they may, twisting of the pedicle, particularly in ovarian tumour, must be considered as a threatening and grave complication, and if other reasons for their removal were wanting, in themselves they must form an efficient reason for ovariotomy.
BIBLIOGRAPHY.


Professor Simpson said he had listened with great attention to Dr Haultain's paper, which illustrated a very interesting condition. It was a valuable contribution, and the Society was indebted to Dr Haultain for having brought the cases together and classified them in the way he had done. He (Professor Simpson) showed to the Society some years ago an ovarian cyst with twisted pedicle, where he had diagnosed the condition from the doctor's letter. But not only was there rotation of the pedicle, but the whole uterus was also twisted. That was the only case of the kind he had seen. Subperitoneal fibroids often showed torsion of the pedicle, but rarely was the uterus itself twisted.

Dr Howard Kelly said he had enjoyed very much the series of cases. Out of a large experience he had met with two cases of uterine torsion.

Dr Barbour said axial rotation of the uterus was a very interesting condition. It was extremely rare, and he had only found two instances in literature.

Dr Ballantyne considered that the explanation of uterine rotation lay in the fact that the majority of the cases were fundal fibroids. He thought the whole organ would be drawn
up and the broad ligaments drawn out also. Rotation of the tumour and uterus might quite well occur in that condition without affecting the lower part of the uterus and broad ligaments.

Dr Haultain thanked the Fellows for the kind way in which they had received the paper. He could not see how two-thirds of a twist of the uterus could impede the whole circulation through the organ. It was difficult to see how the circulation by way of the ovarian veins and the pampiniform plexus was affected. In the case of the ovary with hemorrhagic infarction, it was almost impossible to differentiate it from the spleen. The girl had never any pain, only profuse hemorrhages.

XI. THE GERM-CONTENT OF THE UTERUS AND VAGINA DURING THE NORMAL PUERPERIUM.

By James Brownlee, M.D., Stockton-on-Tees.

The study of the bacteriology of the genital passages may be said to have begun in 1887, with the publication of Gönner's article (1), in which he came to the conclusion that auto-infection of the parturient woman is impossible, and that puerperal septic troubles must be attributed to imperfect asepsis on the part of the lying-in woman's attendant, medical or otherwise.

Since then obstetricians have been divided into two camps, the one party upholding the views just mentioned, and hence advocating the strictly aseptic conduct of labour, the other declaring that auto-infection is possible, and that in conducting a labour one must be antiseptic. Very numerous and in many cases elaborate investigations have been undertaken with a view to settling the question. And although the general trend
of opinion is rightly, I think, toward the former, i.e., the aseptic view of the case, we are far from reaching unanimity on the subject.

In proceeding to a somewhat hurried resumé of the literature of the subject, I take, as already indicated, Gönner as the real originator of the discussion.

He examined the secretion from the cervix and vagina of 31 healthy, pregnant women. Though finding immense numbers of bacilli and cocci both by microscopic and culture methods, these proved to be non-pathogenic. Hence his conclusion as to the impossibility of auto-infection, and as to the advisability of refraining from prophylactic douching and other active antiseptic precautions.

Very soon afterwards Döderlein (3), was in the field with a series of observations on which he founded an exactly contrary theory, and advocated strict disinfection of the vagina during and before labour.

He examined secretion both from the cavity of the uterus and from the vagina, and while the uterine secretions were uniformly sterile, the vaginal lochia contained various species of organisms, and not infrequently pyogenic streptococci and staphylococci.

In 1892 he returned to the subject (4). On this occasion he divided the vaginal secretions of 195 pregnant women into two types, "normal" and "pathological." "Normal" secretion he described as a thick, crumbly, dry material with an acid reaction and showing microscopically epithelial cells, a large number of long, tolerably thick bacilli, and a few yeast cells. "Pathological" secretion is more fluid and purulent, less acid, or sometimes neutral or alkaline, and microscopically shows many leucocytes as well as epithelial cells and a great variety of bacteria, especially cocci and short bacilli. He concluded that auto-infection was impossible in "normal," possible in "pathological" cases.
In 1895 (5), he had so far modified his views that he advocated the restriction of antiseptic douching to those cases only in which operative interference was necessary.

Winter (7), in 1888, found the normal uterine cavity uniformly germ-free. In 20 women, 10 of whom were pregnant, he was able to demonstrate in the secretion from the cervix and vagina 27 varieties of bacteria, including streptococci and all varieties of staphylococci. Hence he was an auto-infectionist.

In the same year v. Ott (8), from an examination of the lochia of 9 puerperal women, concluded that not only the uterus but the upper part of the vagina also was germ-free in normal cases.

In 1888 also Czerniewski (9) published a series of 57 cases of fever-free puerperal women, in 56 of whom the uterine lochia gave negative results.

Two years later, Thomen (10) examined 7 pregnant women and found neither staphylococci nor streptococci. Among 13 other cases examined within five days of labour, he found several with streptococci either in the uterus or vagina or both.

About the same time Steffeck (11), from an investigation of the secretions of 29 pregnant women who had not been vaginally examined, concluded that in such cases the bacteria found are pathogenic.

Burguburu (12), in 1892, decided that pathogenic bacteria, though diminished in virulence, do frequently occur in the vagina of pregnant women.

In the same year Maslowsky (13) published results which led him to the same conclusions as Burguburu.

Witte (14), in 1893, confirmed these results with regard to “pathological” secretions. In “normal” cases he found no pathogenic bacteria.

Whitridge William's first results, published in the same
year, "confirmed in a general way Döderlein's conclusions." Later, however (in 1898), the same observer (23), struck by Krönig's results and remarks on imperfections in technique of most previous investigations, repeated his observations on 92 pregnant women, with results which caused him entirely to change his views on the subject, and to become a firm believer in the aseptic view of the question.

Among other conclusions he comes to are these:—

(a) That auto-infection is impossible; hence prophylactic douching is useless and harmful.

(b) Vaginal examinations are dangerous.

(c) Abdominal examination must largely replace vaginal examination.

V. Franque (15), in 1893, in 10 normal cases found the uterus germ-free 8 times. In the same year Stroganoff (16) examined the vaginal secretion of 11 pregnant women, and found 9 cases sterile. He concluded that the vaginal secretion has bactericidal properties, and made an experiment with staphylococcus albus, which seemed to prove this theory.

Burckhardt (17), in 1894, from a clinical study of 116 pregnant women, decided that the difference between "normal" and "pathological" secretion is very pronounced, and that the danger of illness during the puerperium is distinctly greater with the latter than with the former.

Early in the same year Krönig (18) came to the definite conclusion that the vagina of every pregnant woman, who has not been examined, is aseptic. Some months later he investigated the anti-bacterial action of the vaginal secretion, and concluded that antiseptic vaginal douches are harmful by weakening the normal antiseptic power of the secretion.

In 1897 (19) the same writer returned to the subject in that important work, Menge and Krönig's _Bakteriologie des Weiblichen Genitalkanales_. Here he once more asserts that the uterus normally is germ-free. He further declares that every case
with germs in the uterus has, in consequence, either general disturbance or local inflammation, and that the normal endometrium of the puerperal uterus has strong anti-bacterial properties. As regards gonococci, of 50 puerperal women showing these organisms, 41 had symptoms of fever, but as a rule much less acute than ordinary septicemias due to streptococci.

Walthard (20), in 1895, from 100 cases, declared himself strongly in favour of the possibility of auto-infection, as also did Vahle (21) in 1896. Kottman (22), in 1898, joined the same side.

About the same time Burckhardt (25) declared that the cavity of the uterus is germ-free at the beginning of the puerperium, but by the eleventh or twelfth day he had 24 positive results out of 30 cases examined.

In 1889 Hallé (26), one of the few French obstetricians who have written on the subject, found numerous bacteria in the secretions from the vulva, vagina, and cervix of normal women.

Stahler and Winckler (27), in the same year, concluded that in the great majority of cases with a fever-free puerperium the uterus is germ-free; but that it is possible for living saprophytic organisms to be found there under normal conditions without their products having any deleterious effects.

Next year (28) the same observers published a series of observations on the vaginal secretion of pregnant women. They express the opinion that "pathological" vaginal secretions frequently contain facultative anaerobic streptococci of more or less diminished virulence.

The observations of Bensis (30) were made about the same time on the secretions obtained from the fundus and introitus vaginis of 15 pregnant women. The former were practically free from pathogenic bacteria. The latter were much less so.

Still, in 1900, Franz (29) set forth the view that slight fever in the puerperium is in most cases due to saprophytes obtaining entrance to the uterus, and that this, combined with some
interference with the escape of the lochia, gives rise to the disturbance. In 10 normal puerperae he found the uterus germ-containing.

In 1901 three articles appeared under the names of Schauenstein, Vogel, and Wormser.

Wormser (31) got a positive result in 84 per cent. of his cases, in normal puerperal women, from the twelfth to the eighteenth days. On the other hand, he considers it pathological if, in the first week of the puerperium, germs are found in such circumstances.

Schauenstein (33) raises the questions:—

1. Is the entire secretion-content of the Döderlein tube equivalent, in a bacteriological sense, to that part in the middle of the tube, or not?

2. What influence has the quantity of inoculated material on the culture results?

3. Is the uterine cavity of a normal puerperal woman germ-free, or not?

The first question he answers in the negative. In regard to the second, he found that the more material he used the more positive results he obtained. To the third, his answer was that in 64 per cent. the uterus was germ-containing.

Vogel (32) got positive results as regards pathogenic bacteria in the uterine lochia in a large percentage of cases, in fever-free women; but more in the later than in the earlier days of the puerperium.

Franz (35), in 1902, controverts Schauenstein's conclusions about the relative germ-content of the different parts of the Döderlein tube. He advocates the use of as large a quantity of secretion as possible, at least 1 c.m.

In the same year, Bergholm (36) examined the vaginal secretion of 40 pregnant women, and found practically no pathogenic bacteria. The contributions of Marx and Stolz bring the literature practically up to date.
Marx (37) decides that the uterus, during the first six days of labour, is normally a sterile organ; and that auto-infection is practically impossible from a normal vagina, which can be diagnosed from the clear, sticky, acid secretion. When, however, the vaginal secretion is alkaline and purulent, indicating a probable gonorrhoea, active antiseptic measures are necessary.

Stolz's (38) investigation had reference partly to the question of the effect of vaginal examination before and during labour, partly to the comparative results on the fourth and ninth days. As regards the first question, his results would seem to indicate that vaginal examination makes little or no difference. For the rest, he finds that germs are more numerous in the vagina of puerperal than of pregnant women. On the other hand, there are fewer bacteria in the lochia on the ninth than on the fourth day.

My own series of cases consisted of 20 normal puerperal women, the specimens being obtained on days varying from the second to the twelfth. The result of the examinations was that although no single specimen gave negative results throughout, yet the 37 uterine specimens showed only 3, in two patients, in which a pathogenic organism, viz., the gonococcus, was present, and the 42 vaginal specimens only 5, in which such organisms occurred, viz., gonococcus twice, bacillus coli communis and staphylococcus pyogenes aureus once (the last being almost certainly a contamination).

Of the cases with gonococci, one showed a maximum temperature of 98.4° F., the other 99° F. The case with staphylococcus pyogenes aureus had an absolutely normal temperature throughout, while the case in which bacillus coli was noted was also practically normal throughout. The other organisms noted were cocci and bacilli of various sizes, the bacilli being rather more common, and in many cases showing spores and involution forms. Most grew both
anaërobically and aërobically. No obligatory anaërobes were noted.

These results notify, I think, my conclusion that the lochia of normal puerperal women only exceptionally contain organisms capable of giving rise to puerperal septicæmia. That they do not contain organisms which may on occasion give rise to slight fever, I am not prepared to say.

In the perusal of the previous pages, perhaps the most striking feature is the diametrical opposition of so many of the results. In attempting to account for this, one must remember (1) the differences of technique; (2) the times at which the specimens were obtained; (3) the amount of secretion used for examination, etc. Most important of all I consider the question of technique, and I must now proceed to discuss this at some length.

**Vaginal Secretion.**

As regards vaginal secretion, Williams (23, 24) following Krönig, lays great stress on the fallacy originating from the use of a speculum. This, in some form or other, was done by Winter, Steffek, Maslowsky, Stahler-Winckler (Simon's), Thomen, Vahle (Sina's), Döderlein, Witte, Stroganoff, Burekhards, Walthard, and Stolz, either porcelain or glass cylindrical specula being used. The secretion was then taken with either a curette, a tube, a platinum loop, or a spatula. Williams, in 1893, used a speculum. In 1898 he discarded it for a Menge's tube. This is a small double metal tube, the outer part of which has a fenestrum towards the end, which fenestrum can be closed at will by the inner tube. The instrument is introduced into the vagina with the fenestrum closed, the labia being held apart, so that contamination from them or the hymen can easily be avoided. The fenestrum having been opened, secretion is obtained by imparting a twisting movement to the instrument, which is then carefully
withdrawn, the fenestrum having been again closed. (Kottmann's special apparatus is quite as open to objection as any speculum.) Burguburu used a pipette to suck up the secretion, and Krönig did the same in one series, but used a platinum loop in the other. Bensis and Bergholm used a Menge's tube. My own apparatus was a glass tube of about 5 mm. diameter, attached to an aspirating syringe, and I found that, by having the labia held well apart by an assistant, I could introduce it without chance of contamination from the vulva or hymen.

The careful use of a platinum loop, a pipette, or a Menge's tube should, I think, give equally accurate results.

Williams' convincing demonstration of the possibility of contamination from the use of a speculum is confirmed by the fact that as a general rule those observers who used a speculum got positive results as regards pathogenic bacteria, those who adopted other methods mainly negative results.

The organisms generally found by Williams, Krönig, Bergholm, etc., were non-pathogenic cocci and bacilli, especially the latter, of very variable shape and size, and different capacities for growth on aerobic and anaerobic media. Bergholm, for instance, mentions 10 different varieties, practically all non-pathogenic. Williams has a still larger number of slightly varying types, the only one with any claim to a definite identity being the bacillus vaginæ of Döderlein.

In my own series of vaginal specimens I was able to distinguish five distinct forms of organisms, including yeast, different from the ordinary pyogenic types. Yeast has been noted by several observers, notably Krönig and Williams. Krönig also mentions the ouidium albicans as an occasional inhabitant of the vagina.

Further discrepancies in results might be sought for in the different media used. A number, especially of the earlier
BY DR. JAMES BROWNLEE.

investigators; for instance, took no account of anaerobes, but on the whole I do not think that much can be made of this point.

More important, perhaps, will be found the difference in sexual and social hygiene of the patients. But this is matter on which fuller information is necessary.

The question of the quality of the discharge as "normal" or "pathological" in Döderlein's sense, has received a great deal of attention. Here, too, the evidence is very conflicting, and perhaps we shall come nearest to the truth, if, while admitting that it may be possible to distinguish two distinct types of secretion, we agree with Krönig in saying that it is of no importance to do so.

As to the influence of the time at which the secretion is obtained, a similar variety of opinion occurs. Döderlein gives a table of statistics which seem to prove that this is of no consequence. On the other hand, Burckhardt, Wormser, Marx, and others are of quite another opinion.

**Uterine Lochia.**

With regard to uterine secretions the diversity of opinion is quite as great, and may be attributed more or less to the same causes.

As regards technique, Döderlein's method of displaying the cervix with a speculum, drawing it down with a vulsellum, wiping it dry with a sterile swab, then introducing a glass tube, bent to suit the uterine curve, and withdrawing the secretion by suction with a syringe, seems on the whole the least open to objection. It is comparatively easy to do aseptically, is practically free from danger to the patient, and it almost invariably enables one to obtain a plentiful supply of the secretion. This was the method which I adopted throughout my series of cases. My results, however, are very far from coinciding with those of Döderlein, in spite
of the fact that the media used were like the technique, practically the same. The difference can, however, be explained at least in part, by the fact that I considered even a single colony a positive result, where Döderlein, like a good many other observers, e.g., Wormser and Franz, fixed a considerably higher limit in this respect.

Among others who used a tube like Döderlein's were Krönig, Thomen, Schauenstein, Wormser, Franz, Vogel, and Marx. Of these, Schauenstein, perhaps the most elaborately careful of all, has almost the highest positive find of pyogenic bacteria, viz., 64 per cent. Wormser, who had 84 per cent., he thinks to have used too much secretion. Döderlein, on the other hand, he considers to have used too little, and in this he professes to find a probable explanation. He himself only used secretion from the middle of the Döderlein tube, a proceeding the wisdom of which I think very obvious. Marx's limitations, in regard to the media used, nullify his results to a large extent. Von Ott, and Czerniewsky were too vigorously antiseptic in their precautions, as also, though to a less extent, was v. Franqué. Stahler-Winkler introduced a speculum directly into the uterus, a proceeding surely fraught with danger to the patient, and obviously open to criticism technically.

As to other causes of differences of opinion, such as the time at which the secretion is obtained, my remarks under the head of vaginal secretions might be repeated almost verbatim.

The question of real importance is, however, not so much whether or not the uterine cavity is absolutely sterile in the normal puerperium, but does it contain pyogenic cocci of any sort which could produce puerperal septicæmia? Burekhardt, Vogel, Wormser, and Marx agree in a sort of middle opinion, holding that in the early days of the puerperium the uterus is germ-free, while later it is not, and may contain pyogenic
cocci, without, however, giving any clinical evidence of their presence. Franz and Stolz are on the positive side throughout, the latter rather reversing the opinion of the observers just mentioned.

Krönig, on the other hand, declares that the presence of pyogenic organisms in the uterus is invariably accompanied by a rise of temperature or some other disturbance. Von Ott, Czerniewsky, and v. Franquè are on the same side, though, as already hinted, their opinions do not carry nearly the same weight as Krönig's.

As regards my own results, I would like to bring one point out here. It is that in the great majority of the cases the growths on the culture media were very much more profuse in the case of vaginal than uterine specimens. These, of course, could be to some extent explained by the relatively larger number of bacteria present in the vagina. But in many cases it was quite evident from the direct films that there was as great a bacterial density in the one as in the other, and yet the results were as stated. Is there something in the different secretions to account for the variation, or is there, as Krönig suggests, an anti-bacterial power in the normal puerperal endometrium?

To such subsidiary questions as the effect of duration of labour, or its various stages, the number of the labour, etc., I could not, from my small selection of cases, presume to generalise. Nor do the results of many of the above writers help us, so hopelessly at variance are they. On one point, however, there is unanimity, viz., that retention of fragments of secundines encourages the growth of bacteria in the uterus.

From the study then of the results and opinions of the various writers mentioned, and of my own series of observations, I have come to the following conclusions:—

1. We may look on the genital passages of the female as
GERM-CONTENT OF THE UTERUS,

normally free from pyogenic cocci, which can cause puerperal septicæmia.

2. The same can not be said as regards organisms, both aërobic and anaërobic, which, while not actually pyogenic, may yet be capable of causing the slighter fevers of the puerperium.

3. Gonococci may be found in the puerperal uterus, even in cases running an apparently normal course.

4. Antiseptic douching before, during, or after labour, is to be considered, in all ordinary cases, not only unnecessary but actually dangerous, since it has been amply proved that the normal secretions of the genital passages have distinct bactericidal powers; and if we remove those secretions by douching we lower the powers of resistance of these parts, and thus increase the danger of infecting them by accidental contamination in the process of douching.

Perhaps some additional details as to technique, etc., would not be out of place here.

As to sterilisation, the method I adopted was simply to boil all the necessary instruments for at least 15 minutes. The cotton wool used for swabs was sterilised by dry heat. My hands were prepared as if for a surgical operation. The method of obtaining the secretion has already been mentioned. The tubes were sealed with wax and transferred to the laboratory of the Dundee University College, where they were examined as soon as possible. The middle part of the secretion was always chosen, the tube being broken there, and a large loopful inoculated on each of the following media, always with the same loop, to secure uniformity in quantity:—

1. Slightly alkaline agar slopes.
2. Slightly alkaline agar stabs.
3. Agar in tubes, melted, inoculated at 40° C. or thereabout, allowed to solidify, and then covered over with a fresh layer of melted agar.
4. Bouillon.
Gelatin was used in the first twelve observations for inoculation (3), but was discarded on account of its liability to contamination. Coverglass films were made and stained with saturated watery methylene blue in every case, and in the last fifty-six observations, also by the Gram-Weigert method, methylene-blue films were also made and examined from every tube in which growth appeared; except most of the layered tubes. The organisms found were these:—

A. In the uterine and vaginal specimens.

A bacillus of somewhat variable size, which in process of development took on spore formation and showed a great variety of what were apparently involution forms, e.g., beading, clubbing, bipolar staining, and formation of filaments of various lengths, never however branching. It resembled in many ways bacillus subtilis, but grew both aerobically and anaerobically, and was larger and coarser. It stained by Gram.

2. A short bacillus, generally in pairs, often showing distinct metachromasia, grew in bouillon only, and appeared in one case to be in pure culture.

3. A large coccus, occurring sometimes in pairs, at other times in groups like staphylococcus. It appeared in two or three cases in pure culture, and had not the appearance of any of the pyogenic organisms.

4. A small coccus, occurring singly, in pairs, or groups, generally along with 1, often showed metachromasia.

5. A diplococcus having the morphological characters and staining reactions of the gonococcus.

B. In the vaginal specimens only.

6. A coccus having the characters in film and culture of staphylococcus pyogenes aureus. Almost certainly a contamination, it occurred once only.

7. A bacillus staining uniformly, and both in microscopic
and macroscopic appearances resembling closely bacillus coli communis, occurred in the same patient on two different occasions. She had no clinical disturbance.

8. Forms like yeast fungi appeared in two specimens.

The question of gonococcal infection is one of considerable difficulty, because, although scientifically speaking it cannot be a cause of auto-infection, yet with its capacity for living there for indefinite periods of time, it becomes such for all practical purposes. Frumsholz (36), who has made a careful study of the question, states that the lochial discharge forms an excellent medium for the development of the gonococcus, which always multiplies very rapidly in the first days of the puerperium. He holds further, that though true mixed infection is rare with the gonococcus, yet on the contrary, secondary invasions by other pyogenic bacteria are favoured by its presence.

Krönig concludes that even where we get a puerperal infection with gonococci, the results are less acute and more prolonged than in an ordinary puerperal septicæmia.

As regards treatment during labour of a case with gonorrhœa, perhaps, bearing in mind the great difficulty of curing such a condition under ordinary circumstances, the best plan is to leave them alone.

Finally, perhaps, you will allow me to make a short note on five other cases, which were examined in series with the others described, but which for various reasons developed febrile temperatures, i.e., above 100° F., during the puerperium. In one only was a pyogenic organism discovered, viz., the gonococcus. In the other four the bacteria present were to all appearances simply the same cocci and bacilli as were so frequently found in the other cases. In one case they grew very profusely, in the others not specially so. A consideration of these cases, small in number though they are, would seem to suggest that feverish symptoms during the puerperium are by no means always due to ordinary pyogenic bacteria, and I can entirely agree with
Marx in strongly emphasising the necessity for considering every puerperal case with a disturbance of temperature, from a general as well as a local standpoint. In one of the five cases, I feel sure that severe constipation was the chief cause among the several possible factors of disturbance which she offered.

In another, the rise of temperature was so evanescent, and so comparatively slight, that taking into consideration the evidence of subinvolution with retention of fresh, copious lochia, I think one might possibly look on it as analogous to the so-called "aseptic" fever of surgical wards, e.g., in simple fracture of limbs.

A third case quite baffled me to explain the cause of a rise of temperature for a few hours to 102° F. There was absolutely no evidence of pelvic trouble. The other two cases gave sufficient evidence of pelvic trouble to account for their temperatures. Showing as they did exactly the same bacteria as the other twenty normal cases, they constitute my reason for hinting at the possibility of occasional puerperal uterine trouble from bacteria other than the ordinary pyogenic organisms. They do not, however, to my mind, provide any reason for altering the conclusions I have already stated.

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Professor Simpson said they were very glad to have a paper
of that character presented to the Society. They rather lacked
investigations of that sort, and they had to thank Dr Buist for bringing the paper forward.

*Dr Scott Carmichael* considered the paper very interesting. While he was with Professor Martin he examined the uterine contents in fourteen cases where the temperature rose after labour. In nine there was local infection, and organisms were found in the uterine secretion, which was obtained by inserting a bent glass tube and without employing suction. He found in different cases the gonococcus, streptococcus pyogenes, staphylococcus, and mixed infection—staphylococcus and streptococcus, the latter predominating.

*Dr Buist* said where the secretion was scanty one required to suck it out. In cases where the streptococcus was found active treatment was required, but if the organisms were not pyogenic the uterus was treated with less rigour.

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**XII. ON A CASE OF SARCOMA OF THE CERVIX.**


Thirty years ago, in November 1875, Professor Simpson read before our Society his paper on Sarcoma Uteri, which first brought this pathological condition under the notice of British gynaecologists. Till that time it had not attracted much notice, and was spoken of as "recurrent fibroid." The paper recorded four cases, in three of which there were features of special interest. One showed the development of sarcoma in what had probably been a myoma. A tumour had been noticed as causing a difficulty in labour, and five years subsequently a tumour was removed, growing from the anterior wall of the cervix and body of uterus, and was found to be fibroid with sarcomatous degeneration. I should mention that in the interval portions of the tumour had been removed on
four different occasions; that after this the patient lived for another four years, when another mass was removed, which now consisted of spindle-celled sarcoma only.

The second case was peculiar in that while the growth sprang from the body, it also invaded the Fallopian tubes until it projected from the fimbriated extremities. This case is, so far as I know, unique; at least I have not come upon a similar one in the literature, so far as I have gone hitherto.

The third case showed the rare complication of inversion of the uterus. Professor Simpson refers to this as having been noted in four of the 48 cases that had been recorded up to that time, and I have come upon three others in the later English literature.¹

An exhaustive study of the literature, a characteristic feature of all the communications from the same pen which have enriched the Proceedings of our Society, brought together only 48 recorded cases of uterine sarcoma up to that date. Since then it has received a recognised place among the malignant conditions of the uterus. While so many have been published that it is no longer worth while collecting all the recorded cases, the condition is of sufficient rarity to justify my bringing another under your notice. Besides the interest of the case in itself there is this further reason, that I wish to put it alongside of another malignant condition of the female generative organs which was at first placed among the sarcomata, but has of recent years been recognised as a distinct condition, under the term of endothelioma.

The history of the patient from whom this tumour of the cervix was removed is as follows. E. H., æt. 33, v.-para, consulted Dr B. P. Watson at the Cowgate Dispensary on account

of uterine haemorrhage. Two weeks previously she noticed that blood began to drip from her, the bleeding being profuse from the very beginning, and lasting so all that day. The day following there was less, and it remained so until she came to the Dispensary. After examination the bleeding was so copious that the vagina had to be packed. Dr Watson felt the tumour projecting from the cervix, soft in character, and bleeding profusely. The patient had to go home for a few days to wean her seventeen-months-old child, and was then admitted to the Infirmary, where she came under my care. There is nothing in her previous history or in her family history worthy of note. Vaginal examination showed that the cavity of the vagina was occupied by an irregular polypoidal mass growing from the posterior lip of the cervix, with a broad base of attachment extending upwards towards the uterine cavity, and backwards into the posterior fornix. Bi-manually the uterus was not enlarged, but there was infiltration on the left side of the cellular tissue beside the uterus, and high up in the right lateral fornix some pea-like bodies were felt, recognised most distinctly per rectum, and evidently affected glands.

As the condition was too far advanced for hysterectomy, I decided to remove as much of the tumour as possible per vaginam. To remove the base of the tumour I tried first the cautery, but fortunately abandoned it for the scissors. Fortunately, because in pulling down the tumour the tissues of its bed were so friable that I went through them with the scissors and into the pouch of Douglas. The intestines came down, but were easily replaced, and the pouch of Douglas and bed of the tumour packed with iodoform gauze. The patient suffered from shock after the operation, but improved on a rectal injection of half a pint of saline solution. There was troublesome bleeding, and it was a question whether it might not be necessary to do hysterectomy to control it.
Owing to the invasion of the tissues around it would have been an unsatisfactory operation, and only justifiable as a dernier ressort. Microscopic examination of the mass removed showed that it was rapidly-growing round-celled sarcoma. The patient recovered well from the operation.

As showing the rarity of this condition, during the fifteen years that I had charge of Sir Halliday Croom's Ward during vacation time, I saw only four cases: one of the cervix, similar to the present one; a second growing beside the cervix and involving it, which appeared to have begun in the cellular tissue; and two others of the body of the uterus. Since then I have seen another, an extensive fungating tumour of the body of the uterus which dilated the cervix and hung down in the vagina; the patient was under my care in the autumn vacation in the University Ward.

Its frequency relative to other uterine tumours is thus stated by W. Roger Williams in his interesting paper on this subject.\(^{1}\) In the uterus "the disease is certainly very rare, for my analysis of 2649 consecutive cases of primary uterine neoplasm comprises only two examples, whereas it includes 1571 cancers and 883 fibro-myomas. Similarly, of Gurilt's 4115 uterine neoplasms only eight were sarcomatous."

XIII. ON ENDOTHELIOMA OF THE OVARY.

By A. H. F. Barbous, M.D., F.R.C.P.E., Assistant Gynaecologist to Edinburgh Royal Infirmary.

A few weeks ago I laid before the Society two tumours of the ovary which were evidently malignant in character, but the exact nature of which was not evident from the clinical history and the naked-eye appearance. Subsequent microscopic exami-

nation has shown that they belong to the rare variety of endothelioma ovarii, to which attention has only been directed during recent years. The rarity of the condition and its histological interest are sufficient reason for my making it the subject of a special communication. The clinical features of the case are as follows.

M. F., aged 42, iv.-para, was admitted to the Royal Infirmary complaining of pain in the epigastric region which has been present for two years, and a swelling in both iliac regions which she had observed for six months.

About a fortnight after the birth of her last child three years ago, she took a severe shivering, accompanied with pain in the epigastrium and vomiting. This was relieved by fomentations and medicine ordered by the doctor, who saw her on the next day. The pain became less severe, but the vomiting continued for about three weeks, at the end of which time she returned to her work. The pain, however, never left her entirely, recurring every two or three days, and lasting for some hours. When it came on she had to go to bed, and was relieved by a profuse perspiration. A year ago she had a recurrence of the severe pain, similar in character to the previous attack, but without vomiting, and since this it has recurred at intervals, rendering her unfit for work. Six months ago she noticed a swelling in the left iliac region, and shortly after this a similar one on the right side. She describes the latter as being as hard as a stone, while that on the left side was softer. Two months ago the pain became more severe and accompanied with vomiting, and about this time she passed blood from the bowels.

There is nothing further in her history worthy of note, except that the menstruation has not returned since the birth of her last child. Her family history is good.

Examination shows abdominal distension more prominent on the right side, and palpation reveals two tumours of firm
consistence, with a nodular surface and freely mobile. They occupy the iliac and lumbar regions, and pass down into the pelvis. Their consistence and well-defined outline suggest a uterine fibroid, but no souffle is to be heard; on the other hand there is no distinct evidence of ascites, pointing to a malignant character. Bi-manual examination shows the uterus to the front but not mobile, though the tumours can be moved independently of it. Nodules are felt on the left side of the cervix, and in the right and left lateral fornices there are also nodules, which do not move when the abdominal tumours are moved.

An exploratory incision was made, and on opening the peritoneal cavity two solid tumours were found, springing from the ovaries, with a small amount of ascitic fluid. The appearance of the tumours suggested a malignant condition, but as there were no adhesions of consequence, and both tumours were pedunculated, it was decided to remove them. The pedicle of the left was broad and fleshy, but was easily secured by a chain suture in three loops. There were also adhesions of the bowel to the back of the broad ligament in the left side. The right tumour was larger and showed recent adhesions, which were easily separated, but there was some difficulty in securing its broader pedicle. It was tied also in three portions. There was now trouble from bleeding from the left pedicle, necessitating its being ligatured a second time lower down. On removal of the tumours, the peritoneum was seen to be thickened by malignant infiltration.

Patient was very well on being put back to bed, and lay quiet during the afternoon and evening, sleeping at intervals; on the following day she continued well, but unable to pass water, which had to be drawn off by the catheter. She was sick only once. On the third day her condition became far from satisfactory, pulse becoming weaker and faster, 120. In the evening an enema was given, but she passed no flatus, but on the repetition of it she passed flatus and was more comfortable.
Fig. 1.

Endothelioma of both ovaries.

[To face page 230.]
As there was abdominal distension I examined per rectum, and found high up what I had not noticed before, a nodule in the wall of the bowel about the level of the sacral promontory. Her condition became steadily worse. Hypodermics of strychnine and strophanthin were tried, but the pulse would not respond. The temperature varied between 98° and 99°, rising on three occasions to 99-6°, and to 100-6° just before death. Various attempts were made to overcome the paralysis of the bowel, but without much result. The stomach was washed out. Opening the abdomen to ascertain whether there was obstruction or simply paralysis of the bowel was considered, but, owing to the weakness of the patient and the malignant infiltration of the peritoneum, this was deemed undesirable. Twenty-four hours before death she began to vomit, the material having a foul smell. She died on the fifth day after the abdominal section, and no post-mortem could be obtained.

Fig. 1 shows the naked-eye appearance of the tumours; and for the photographs showing its microscopic characters I am indebted to Mr Richard Muir, of the Pathological Department of the University, who has also supplied the following description:—

Section No. 1 is taken from the tumour near its surface, and shows the invasion of the stroma of the ovary by the new growth; also dilated lymphatics. No. 2 (magnified forty times) is from a portion of the tumour deeper down, where the ovarian tissue has been entirely replaced by the new growth.

No. 3 (× 120) shows the remains of the ovarian stroma pushed aside by the new growth, which thus comes to have an alveolar arrangement (Fig. 2). In some of the lymphatics the endothelial lining is seen unaltered, while in others it is taking on a columnar form.

No. 4 (× 200) shows similar appearances. In some places there may be seen on one side of a lymphatic space a normal flat endothelial cell, and on the other a columnar cell which is evidently a modified endothelial one.
No. 5 (× 200) shows the building up of columnar cells in the walls of the spaces (Fig. 3). In some spaces the altered epithelium lies as a tubule, like a detached collar, in the lymphatic space. It is difficult to say whether it has been produced from the endothelium at that point, or been carried along from the lymph stream from another point. From the appearance in places it might seem that we had to do with an adenoma, but the spaces are undoubtedly lymphatic spaces; the tubules have no definite basement membrane such as is found in a cancer.

No. 6 shows a formation of new lymphatics. We have undoubtedly here active endothelial changes, the cells showing mitosis.

Through these microscopic sections we can thus trace step by step the development of the sarcomatous cells from the endothelium of the lymphatics. And we have now to consider the place of this tumour among the sarcomata.

Tumours arising from the connective tissue of the ovary are rare, and in this respect form a striking contrast to the ordinary ovarian cystoma. They are simple (the fibroma and fibro-myoma) or malignant (the sarcoma); to which a third form may be added, the extremely rare angioma. Sarcoma occurs either in the spindle-celled or round-celled forms, the round-celled sarcoma producing a softer tumour, resembling closely medullary cancer. As a rule they spring from the connective tissue of the stroma, as distinct from its blood-vessels or lymphatics; and an interesting origin has been demonstrated by Professor Russell of the Johns Hopkins University, who has shown that it may arise from the theca externa of the Graafian follicle. In a paper in the Am. Jour. of Obst. for 1902,¹ he describes a tumour removed by Dr Kelly, which was diagnosed at the time as an adeno-cystoma of the

FIG. 2.

**ENDOTHELIOMA OF OVARY (× 120).**

*a*, Remains of ovarian stroma pushed aside so as to produce alveoli; *b*, lymphatic with normal endothelium; *c*, endothelium becoming columnar.

FIG. 3.

**ENDOTHELIOMA OF OVARY (× 200).**

Note building-up of epithelium in lymphatic at lower edge of section, and its detachment as a collar in middle of section.
left ovary, probably carcinomatous, but of which the subsequent microscopic examination showed that it was a sarcoma. The sarcomatous cells surround the Graafian follicle, and are apparently developed from the connective tissue capsule of the follicle. In this paper Professor Russell states that statistics based on 1106 cases of malignant tumour of the ovary gathered from 16 different gynaecological cliniques give a frequency of 14 per cent. for sarcomata.

Of recent years a special form of sarcoma has been described under the term of endothelioma, in which the sarcomatous cells are traced to the endothelium of the lymphatics or blood-vessels, hence the term endothelioma. They form a rare sub-class of the sarcomata, how rare it is difficult to say. From the fact that the cells originate from the endothelium they resemble in character those found in carcinoma, and probably many tumours which have been described as carcinoma of the ovary belong to this class, so that we have as yet no exact data as to their frequency. Glockner, in a recent paper, goes the length of affirming that the diagnosis of endothelioma is not warranted unless primary carcinoma in some other organ has been excluded by a post-mortem.

The first case was described by Leopold so far back as 1874, the next by Marchand in 1879. The first detailed description we owe to a paper by Pick, which appeared in the Berl. Klin. Wochenschrift for 1894. He describes three types: in the first are seen chains of cells like rose-wreaths running parallel to the fibrous tissue, which on closer examination are seen to be fine tubes filled with lymph or blood corpuscles. These chains communicate with one

2 Zur Kenntniss der Ovarial Tumoren, Halle, 1879.
another, and consist of the proliferating endothelium. The
second type shows a cell formation recalling tubular glands
with a distinct lumen: it is hard to distinguish from an
adenoma or an adeno-carcinoma. While the growth is many-
layered and polymorphous it can be traced to the endothelium.
The tubules may be filled with lymph; it sometimes distends
them, and these running together may assume a considerable
size. The third type shows a sarcomatous structure arranged
in alveoli. All these three types may be found in the same
tumour.

In the same year Amann’s article in the Archiv für
Gynäkologie appeared, describing five specimens which he
laid before the Naturforrscher Versammlung in the previous
year, and from them and other recorded cases he made out
three varieties: the perithelioma, arising from the lymphatics
around the blood-vessels; the endothelioma intravasculare, arising
from the endothelium of the blood-vessel itself; and the
endothelioma lymphaticum, arising from the endothelium of
the lymphatics.

Since Amann’s and Pick's papers appeared numerous
cases have been published, and the literature up to 1901 is
given fully in a paper by Apelt. After a critical examina-
tion of the reputed cases, he makes out 45 true cases of
endothelioma, 46 with his own. Since his paper appeared I
have collected another 23 besides my own, although not
having access to the original articles in every case, I am not
in a position to say whether they are all true cases of
endothelioma. I have added the references, however, to those
given by Apelt, so as to make the bibliography as complete as
I can up to the present year. Assuming that all these more
recent cases are genuine, we have a total of 70 recorded cases.

As regards its clinical peculiarities, Apelt notes that there

1 "Über die Endotheliom des ovariums," Beitr. s. Geb. u. Gym.,
Band v., Heft iii.
never was a history of malignant disease of the ovaries in other members of the family, and that while it may occur at any age, 2 of the 45 cases being under 10, and 4 over 60, it was most common between 40 and 50, 11 cases or 29 per cent. occurring in this decade. The next most frequent period is between 20 and 30, and he draws attention to the fact that the same was observed to be the case in ordinary sarcoma of the ovary, according to Zangemeister's statistics. He found this most frequent about the menopause, and next most frequently in the decade from 20 to 30 years. It has associated with it, in some cases, disturbance of menstruation, but this is by no means constant, for in 29 cases in which data are given with regard to this, there were 13 with disorders of menstruation—9 menorrhagia and 4 amenorrhoea. In 2 cases it was associated with pregnancy, and in 3 followed it. In my own case the tumour must probably have begun to grow within a year of the birth of the child, and had amenorrhoea associated with its development.

As a rule it grows fairly rapidly, attaining the size of a child's head in periods varying from 1 to 12 months. In about one-fourth of the cases (22 per cent.) the condition was bi-lateral, which is about the same frequency as Zangemeister found in ordinary sarcoma.

It is difficult to form an estimate of its malignancy. In some cases it runs a very rapid course. For example, Kottschau records a case in which after removal of the tumour the patient made a good recovery, but within a month returned with swelling of the abdomen, and after two aspirations, died within a fortnight. There may, of course, have been advanced disease of the peritoneum at the time of operation, but that does not come out in his report of the case. Along with this case we may put Lange's, in which the other ovary was left at the time of operation, healthy, and at the post-mortem, within six months, was found to be
affected in a similar way, with extensive invasion of the peritoneum. My own case belongs to this category. On the other hand, cases have been recorded, such as Graefe’s, of non-recurrence many years after operation.

The results of operative treatment are fairly satisfactory. Of 34 cases, 14 sooner or later terminated fatally, 1 at the operation, 7 shortly after it, and the others within eight weeks. Twenty were, however, reported as cured, one after five years. One of Graefe’s cases, operated on in 1897, is reported in 1904 as being still well, that is seven years after operation.

In conclusion, I may say that endothelioma has been described in other parts of the generative organs in women besides the ovary. Dr Kelly, in his “Operative Gynäkology,” refers to a case which occurred in the cervix, and mentions that not more than five or six cases had been recorded up to that time (1898). In a more recent paper Kirchgessner¹ has collected ten cases from the literature in addition to his own, to which Graefe² adds another. It has also been described in the body of the uterus by Silberberg,³ and quite recently in the labium majus by Schmidlechner.⁴

LITERATURE UP TO 1901, AS GIVEN BY APFLT.

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² _Loc. cit._

³ “Ein Fall von Endothelioma uteri,” _Archiv f. Gyn._ (1903), Bd. lxvii., S. 469.

⁴ “Perithelioma labii majoris,” _Archiv f. Gyn._ (1904), Bd. lxxiv., Heft 1, S. 195.


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BROUA.—Rev. de Gyn. et de Chir. Abdom., 1900, No. III.


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GRAEF.—“Zwei Fälle von Endo- bezw. Perithelioma ovarii, etc.,” Arch. f. Gyn., 1904, Bd. lxxii., S. 373.


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HUBERT.—“Ueber Ovarialgeschwülste bei Kindern,” Diss., Giessen, 1901.


LINCk.—"Ein Fall von Endothelioma lymphaticum kystomato- 
tosum beider Ovarien," Diss., Königsberg, 1900.
LINCOLN.—"Endothelioma of the Ovary," Cleveland Med. Jour., 
1903, p. 29.
SCHURMANN.—"Ein Fall von Endothelioma ovarii lymph 
SOUBEYRAN.—"Endothéliome de l'Ovaire," Bell. et Mém. de la 
Bd. xlvii., 1902, S. 357.
TROVATI.—"Contributo allo Studio dell' Endotelioma dell' 
WIEDERSHEIM.—"Ueber einen Fall von Endotheliom des 
Ovariums," Diss., Freiburg, 1900.

Dr Howard Kelly said he had seen a case of endothelioma 
of the ovary. It was of very large size, and on section large 
yellow masses were seen, just like corpora lutea. The patient 
did very well; there was no recurrence. The tumour was very 
puzzling at the time.

Dr Berry Hart said he had a specimen which he was certain 
was an endothelioma of the ovary.

Dr Ballantyne said that probably many of the cases were 
not diagnosed, as they were regarded as cases of cancer of the 
ovary.

XIV. NOTE ON A CASE OF DISTENDED GALL-
BLADDER SIMULATING OVARIAN CYST.

By J. A. KYNOCH, M.B., F.R.C.P., F.R.C.S. (Edinburgh), Professor of 
Gynæcology and Obstetrics, St Andrews University.

Although ovarian cysts have been mistaken for almost all 
forms of abdominal tumour, perhaps the most seldom giving 
rise to doubt in diagnosis are those originating in the splenic
or hepatic regions. This is doubtless due to their point of origin and lower border being usually readily made out. Both conditions have, however, been recently reported upon. In the *Journal of Obstetrics and Gynaecology* for February, Dr Taylor reports two cases where enlarged wandering spleens simulated ovarian tumours, and he refers to other recorded cases of a similar nature. In the June number of the same *Journal*, Dr Wilson reports a case of hydatid cyst of the spleen resembling an ovarian cyst. Recently, Mr Alban Doran has discussed the condition of dilatation of the gall-bladder simulating ovarian cysts. He reports the case of a woman aged 50, who had a tender, elastic, abdominal tumour on the right side, between the hypochondrium and groin. There was a distinct area of resonance between its upper border and the liver. It was fairly movable in all directions, and could be displaced downwards so as to reach Douglas' pouch. Operation proved it to be a distended gall-bladder about the size of a cucumber. It contained many gall-stones, and the cystic duct was obstructed by a large stone. The case was successfully treated by "ideal" cholecystotomy.

Mr Doran discusses similar cases hitherto reported, of which the most interesting are those of Lawson Tait, Kocher, and Osler. In Tait's case, the abdominal tumour, due to a distended gall-bladder, presented all the physical signs of a parovarian cyst, for which it was mistaken. Kocher's case, which was sent into hospital as an ovarian cyst, was the size of a man's head and fairly movable, so that its lower pole could be pushed down below the level of the pubes. In the case reported by Osler, the distended gall-bladder was found fixed to the right broad ligament. In addition to the cases referred to by Doran, Schulerin, in the *Centralblatt für Gynaekologie*, 1901, reports a case of distended gall-bladder the size of an 8½ months' pregnant uterus, removed from a woman aged 40, on account of peritonitic symptoms. The
tumour reached into the pelvis, the uterus lying behind it. Lastly, a case of the same nature has been reported in the *British Medical Journal* of 24th June, by Dr Basil Hall, where the symptoms pointed to those caused by torsion of the pedicle of an ovarian cyst. The following case recently came under my observation. Previous to operation it presented signs pointing to a movable cystic kidney, yet to a certain extent simulated an ovarian cyst. For that reason I report it as an addition to the already recorded cases of enlarged cystic gall-bladder forming a movable abdominal tumour in women:

Mrs F., aged 41—married thirteen years—six children, one miscarriage five years ago. Menstruation regular; had rheumatic fever seven years ago, and a year ago she was confined to bed for six weeks for what she described as catarrh of the stomach. After her recovery from this illness she complained of pain in the back, and for the first time noticed a swelling on the right side of the abdomen. There was no history of jaundice. On examination the patient was rather thin and nervous looking. Beyond some frequency of micturition, the urinary and other systems were normal. On inspecting the abdomen, otherwise flat, a prominent swelling could be made out on the right side, its centre being slightly below the level of the umbilicus. It was slightly tender, smooth, elastic, but not fluctuating. There was a distinct area of resonance between its upper border and the lower margin of the liver. The percussion note was dull over the tumour, which was extremely movable in all directions. On pushing it downwards, its lower border reached the level of the pubes. The uterus and appendages appeared normal. The abdomen was opened by a vertical incision over the most prominent part of the swelling. The right kidney was found normal, and the tumour proved to be a distended gall-bladder, retort-
shaped, and about the size of a big cocoa-nut. Into its upper part there ran a very thin flap of liver tissue, while its lower border was round and free from adhesions. On opening the tumour, pale fluid escaped. The cystic duct was blocked by three facetted calculi. These were removed, along with the greater part of the cyst wall, the remaining portion being sutured to the parietal wound, and drained. A week after operation bile escaped from the wound, which is now practically closed. In this case, the absence of a history of jaundice, accounted for by the cystic duct alone being obstructed, the area of resonance at the upper border of the tumour, along with the fornices being free of anything suggesting a pelvic origin, pointed to the condition being renal, rather than connected with the gall-bladder or ovary.
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